TOSHIBA Leading Innovation

Manual for Service & Troubleshooting

TOSHIBEL

„Manual for service and the decoding of error messages“

Summary of key data from the original Toshiba manuals.

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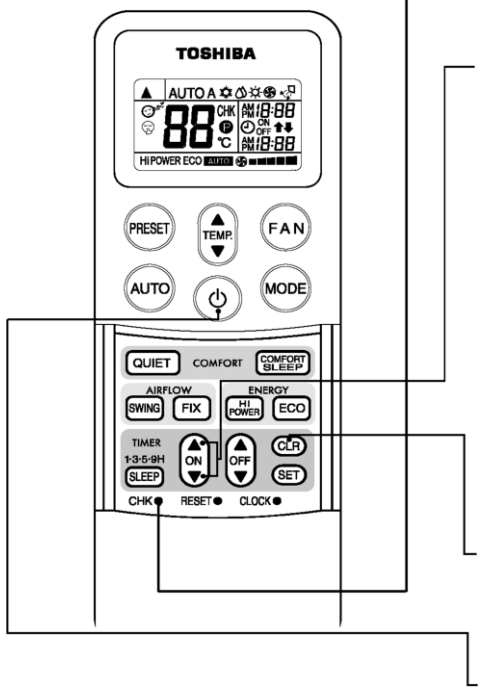
Troubleshooting RAS devices

Self-Diagnosis by Remote Control (Check Code)

(1) If the lamp are indicated as shown B to G in Table 9-3-1, exchanger the self-diagnosis by the remote control.

(2) When the remote control is set to the service mode, the indoor controller diagnoses the operation condition and indicates the information of the self-diagnosis on the display of the remote control with the check codes. If a fault is detected, all lamps on the indoor unit will blink at 5Hz and it will beep for 10 seconds (Pi, Pi, Pi, …).
The timer lamp usually blinks (5Hz) during the self-diagnosis

1) How to use remote control in service mode



(1) Press (CHK) button with a tip of pencil to set the remote control to the service mode.
- "00" is indicated on the display of the remote control
- The timer lamp on the indoor unit blinks continuously. (5 times per 1 sec.)

(2) Press [TIMER ▲] button
If there is no fault with a code, the indoor unit will beep once (Pi) and the display of the remote control will change as follows:

→ 00 → 01→ 02 → . . . 1d → 1E → 22 ⟲

- Check the unit with all 35 check codes (00 to 22) as shown in table 1
- Press [TIMER ▼] button to change the check code backwards

If there is a fault, the indoor unit will beep for 10 seconds (Pi, Pi, Pi,…)
Note the check code on the display of the remote control
- 2-digis alphanumeric will be indicated on the display
- All lamps on the unit will blink. (5 times per 1 sec.)

(3) Press [CLR] button. After service finish for clear service code in memory.
- "7F" is indicated on the display of the remote control

(4) Press [⏻] button to release the service mode.
- The display of the remote control return to as it was before service mode was engaged.

Alphanumeric characters are used for the check code:

5 is 5.	6 is 6.
A is A.	b is B.
C is C.	d is D.

* The illustration in only for Heat pump module.
For cooling only model, there is not the (☼) symbol.

2) Caution at servicing

(1) After servicing, push the START/STOP button to return to the normal mode.

(2) After servicing by the check code, turn off breaker of the power supply, and turn on breaker of the power supply again so that memory in the microcomputer returns the initial status. However, the check codes are not deleted even if the power supply is turned off because they are stored in the fixed memory.

Table 1

Block distinction		Operation of diagnosis function				Judgment and action
Check code	**Block**	**Check Code**	**Cause of operation**	**Air conditioner status**	**Remarks**	
00	Indoor P.C. board etc.	0C	Short-circuit or disconnection of the room temperature sensor (TA sensor)	Operation continues	Displayed when error is detected	1. Check the room temp. sensor 2. When the room temp. sensor is normal, check P.C. board
		0d	Being out of place, disconnection, short-circuit, or migration of heat exchanger sensor (TC sensor)	Operation continues	Displayed when error is detected	1. Check heat exchanger sensor 2. When heat exchanger sensor is normal, check P.C. board.
		11	Lock of indoor fan or trouble on the indoor fan circuit	All off	Displayed when error is detected	1. Check P.C. board 2. When P.C. board is normal, check the motor
	Not displayed	12	Trouble on other indoor P.C. boards	Operation continues	Displayed when error is detected	Replace P.C. board
	Indoor P.C. board etc.	13	TC-sensor-error	All off	Displayed when error is detected	1. Check heat exchanger - sensor 2. Check P.C. board
01	Connecting cable and serial signal	04	Return serial signal is not sent to indoor side from operation started: 1. Defective wiring of connecting cable 2. Operation of compressor thermo Gas shortage Gas leak	Operation continues	Flashes when trouble is detected on operation signal, and normal status when signal is reset	1. When the outdoor unit never operate: (1) Check connecting cable, and correct if defective wiring (2) Check 25A fuse of inverter P.C. board (3) Check 3.15A of inverter P.C. board 2. To display [Other] block during operation, check compressor thermo operation and supply gas (check gas leak also) 3. Unit operates normally during check: If return serial signal does not stop between ② and ③ of the indoor terminal block, replace inverter P.C. board If signal stops between indoor terminal ② and ③, replace indoor P.C. board
		05	Operation command signal is not sent to outdoor side	Operation continues	Flashes when trouble is detected on operation signal, and normal status when signal is reset	If return serial signal does not stop between ② and ③, replace inverter P.C. board.. If signal stops between indoor terminal block ② and ③, replace indoor P.C. board

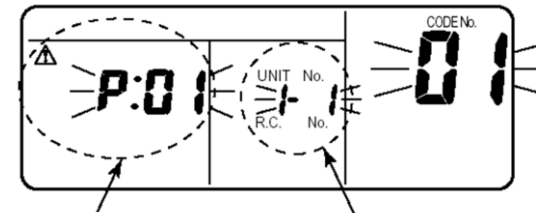
Block distinction		Operation of diagnosis function				Judgement and action
Check Code	Block	Check Code	Cause of operation	Air conditioner status	Remarks	
02	Outdoor P.C. board	14	Inverter over-current protective circuit operates (Short Time)	All off	Displayed when error is detected	Even if trying operation again, all operations stop immediately: Replace P.C. board
		16	Position-detect circuit error or short-circuit between windings of compressor	All off	Displayed when error is detected	1. Even if connecting lead wire of compressor is removed, position-detect circuit error occurred: Replace P.C. board 2. Measure resistance between wires of compressor, and perform short circuit: Replace compressor
		17	Current-detect circuit error	All off	Displayed when error is detected	Even if trying operation again, all operations stop immediately: Replace P.C. board
		18	Being out of place, disconnection or short-circuit of outdoor temp. sensor	All off	Displayed when error is detected	1. Check outdoor temp. sensor (TD) 2. Check P.C. board
		19	Disconnection or short-circuit of discharge temp. sensor	All off	Displayed when error is detected.	1. Check discharge temp. Sensor (TD) 2. Check P.C. board
		1A	Outdoor fan drive system error	All off	Displayed when error is detected	Position-detect error, over-current protective operation of outdoor fan drive system, fan lock, etc.: Replace P.C. board or fan motor
	Not displayed	1b	Outdoor heat exchanger temp. Sensor error	Operation continues	----	1. Check outdoor heat exchanger temp. sensor (TE) 2. Check P.C. board
	Outdoor P.C. board	1C	Compressor drive output error (lock missing, etc.) Break down	All off	Displayed when error is detected	When 20 seconds passed after startup, position-detect circuit error occurred: Replace compressor
03	Others (including compressor)	07	Return serial signal has been sent when operation started, but it is not sent from halfway (1) Compressor thermo operation Gas shortage Gas leak (2) Instantaneous power failure	Operation continues	Flashes when trouble is detected on return serial signal, and normal status when signal is reset	1. Repeat Start and Stop with interval of approx. 10 to 40 minutes (Code is not displayed during operation) Supply gas (Check also gas leak) 2. Unit operates normally during check: If return serial signal does not stop between ② and ③ replace inverter P.C. board. If signal stops between ② and ③, replace indoor P.C. board
		1d	Compressor does not rotate (Current protective circuit does not operate when a specified time passed after compressor had been activated)	All off	Displayed when error is detected	1. Trouble on compressor 2. Trouble on wiring of compressor (Missed phase)
		1E	Discharge temp. exceeded 117°C	All off	Displayed when error is detected	1. Check discharge temp. Sensor (TD) 2. Degasing 3. Trouble on PMV
		1F	Break down of compressor	All off	Displayed when error is detected	1. Check power voltage. (220-240 V +/- 10%) 2. Overload operation of refrigeration cycle Check installation condition (Short-circuit of outdoor diffuser)
		08	Four-way valve inverse error (TC sensor value lowered during heating operation)	Operation continues	----	Check 4-way valve operation
		20	P.M.V. error	All off	Displayed when error is detected	1. Check lamp on inverter P.C. board 2. Check PMV wiring 3. Replace PMV

Troubleshooting at Digital Inverter and Super Digital Inverter

In case of wired remote controller (RBC-AMT32E & RBC-AMS41E & RBC-AMS51E-ES)

(3) **Confirmation and Check**

When a trouble occurs in the air conditioner, the check code and the indoor unit no. are displayed on the remote controller. The check code is displayed while the air conditioner operates. If the display has disappeared, operate the air conditioner and check the error based upon the following "Confirmation of error history"

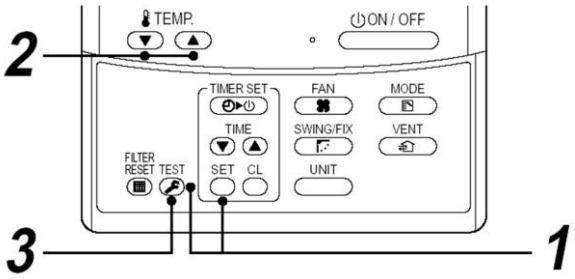


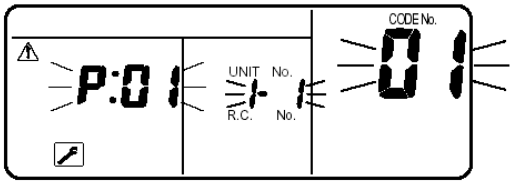
Check code

Indoor unit no. in which an error occured

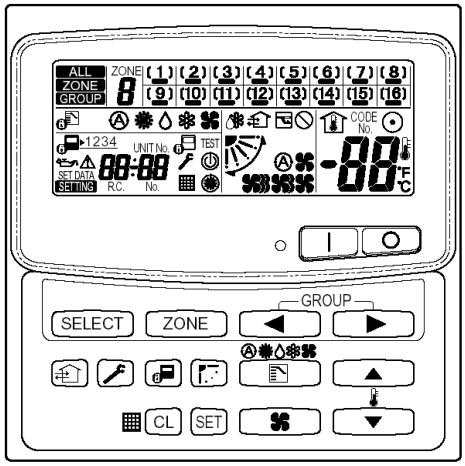
2. Confirmation of error history

If a trouble occurs in the air conditioner, the error history can be found with the following procedure. (Up to 4 error histories are stored in the memory.)
This history can be confirmed from either operating status or stop status.



Procedure	Description
1	When pushing SET and TEST buttons simultaneously for 4 seconds or more, the below display appears. If [Service Check] is displayed, the mode enters the error history mode. [01: Error history order] is displayed in code number window [Check Code] is displayed in code number window [Indoor unit address with error] is displayed in UNIT No. 
2	Each successive push of the temp. set ▼ / ▲ buttons, the error histories stored in the memory are displayed in order. The numbers in the item code indicates item code [01] (most recent) to [04] (oldest). **CAUTION:** If [CL] button is pushed all of the error histories of the indoor unit will be deleted
3	After confirmation, push TEST button to return of the usual display

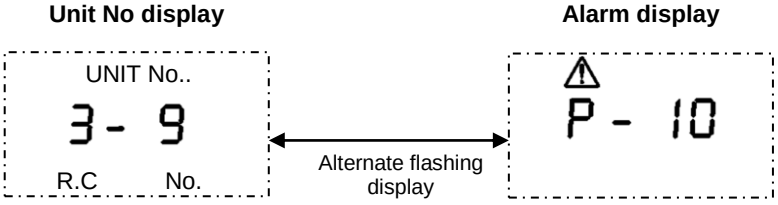
In case of TCC-LINK central control remote controller (TCB-SC642TLE)



1. Confirmation and check

When a trouble occurred on the air conditioner, the check code and the indoor unit no. are displayed on the display section of the remote controller.

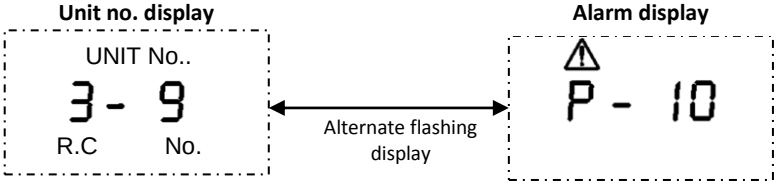
The check code is displayed while the air conditioner operates.
If the display disappeared, operate the air conditioner and check the error based upon the following “Confirmation of error history”.



2. Confirmation of error history

When a trouble occurred on the air conditioner, the error history can be confirmed with the following procedure. (Up to 4 error histories are stored in memory).
This history can be confirmed from either operating or stop.

1) Push [🔧] and [SET] buttons in succession for 4 seconds or more.
2) SERVICE CHECK [🔧] goes on and Item code 01 goes on.
3) When selecting (flash) the group number if there is the alarm history, the UNIT number and the latest alarm history are displayed alternately. * In this time, the temperature cannot be set up.
4) To confirm the alarm history other than the latest one, push temp. set [▲] / [▼] to select Item code (01 to 04).
5) To confirm the alarm in the other group, push [ZONE] and [GROUP ◄ ►] to select the group number.
   Do not push [CL] button because all the alarm histories of the currently selected group are deleted.
6) To finish the service check, push [🔧] button



Check Code List

Error mode detected by indoor and outdoor unit

Wireless sensor lamp display			Wired mode-control	Diagnostic function			Judgment and measure
Operation	Timer	Ready	Check code	Cause of operation	Status of air conditioner	Condition	
◎	●	●	E03	No communication from remote controller (including wireless) and communication adapters	Stop (Automatic reset)	Displayed when error is detected	1. Check cables of remote controller and communication adapters. ▪ Handy remote controller LCD display OFF (Disconnection) ▪ Central remote controller [97] check code
●	●	◎	E04	The serial signal is not output from outdoor unit to indoor unit. ▪Miscabling of inter-unit cables ▪ Defective serial sensing circuit on outdoor P.C. board ▪ Defective serial receiving circuit on indoor P.C. board	Stop (Automatic reset)	Displayed when error is detected	1. Outdoor unit does not completely operate ▪ Inter-unit cable check, correction of miscabling, case thermo operation ▪ Outdoor P.C. board check, P.C. board cables check 2. In normal operation: P.C. board (Indoor receiving/Outdoor sending) check
◎	●	●	E08	Duplicated indoor unit addresses	Stop	Displayed when error is detected	1. Check when there is modification or remote controller connection (Group/Individual) or not after power has been turned on (finish of group configuration/address check) * If group configuration and address are not normal when the power has been turned on, the mode automatically shifts to address setup mode (Resetting of address)
◎	●	●	E10	Communication error between indoor MCU ▪Communication error between fan driving MCU and main MCU	Stop (Automatic reset)	Displayed when error is detected	1. Check cables of remote controller 2. Check power cables of indoor unit 3. Check indoor P.C. board
◎	●	●	E18	Regular communication error between master and sub indoor units or between main and sub indoor unit	Stop (Automatic reset)	Displayed when error is detected	1. Check cables of remote controller 2. Check indoor power cable 3. Check indoor P.C. board
◎	◎	●	F01	Coming off, disconnection or short of indoor heat exchanger sensor (TCJ)	Stop (Automatic reset)	Displayed when error is detected	1. Check indoor heat exchanger temp. sensor (TCJ) 2. Check indoor P.C. board
◎	◎	●	F02	Coming off, disconnection or short of indoor heat exchanger sensor (TC)	Stop (Automatic reset)	Displayed when error is detected	1. Indoor heat exchanger temp. Sensor (TC) 2. Check indoor P.C. board
◎	◎	○	F04	Coming off, disconnection or short of outdoor temperature sensor (TD)	Stop	Displayed when error is detected	1. Check outdoor temp. Sensor (TD) 2. Check outdoor CDB P.C. board
◎	◎	○	F06	Coming off, disconnection or short of outdoor temperature sensor (TE/TS)	Stop	Displayed when error is detected	1. Check outdoor temp. Sensor (TE/TS) 2. Check outdoor CDB P.C. board
◎	◎	○	F08	Coming off, disconnection or short of outdoor temperature sensor (TO)	Operation continues	Displayed when error is detected	1. Check outdoor temp. Sensor (TO) 2. Check outdoor CDB P.C. board
◎	◎	●	F10	Coming off, disconnection or short of indoor heat exchanger sensor (TA)	Stop (Automatic reset)	Displayed when error is detected	1. Check indoor heat exchanger temp. sensor (TA) 2. Check indoor P.C. board
◎	◎	●	F29	Indoor EEPROM error ▪EEPROM access error	Stop (Automatic reset)	Displayed when error is detected	1. Check indoor EEPROM. (including socket insertion) 2. Check indoor P.C. board
◎	●	●	H01	Breakdown of compressor ▪Display when error is detected	Stop	Displayed when error is detected	1. Check power voltage AC200V +/ - 20V 2. Overload operation of refrigerating cycle 3. Check current detection circuit at AC side
●	◎	●	H02	Compressor does not rotate ▪Over-current protective circuit operates after specific time passed when compressor had been activated	Stop	Displayed when error is detected	1. Trouble of compressor (Compressor lock etc.): Replace compressor 2. Defective cabling of compressor (Phase missing) 3. Phase-missing operation of power supply (3-phase model)
●	◎	●	H03	Current detection circuit error ▪Current value at AC side is high even during compressor-OFF ▪Phase of power supply is missed	Stop	Displayed when error is detected	1. Compressor immediately stops even if restarted: Check IPDU 2. Phase-missing operation of power supply. Check 3-phase power voltage and cables
◎	●	◎	L03	Duplicated indoor master units	Stop	Displayed when error is detected	1. Check whether there is modification or remote controller connection (Group/Individual) or not after power has been turned on (finish of group configuration/address check) * If group configuration and address are not normal when the power has been turned on, the mode automatically shifts to address setup mode. (Resetting of address)
◎	●	◎	L07	There is a group line in individual indoor units	Stop	Displayed when error is detected	
◎	●	◎	L08	Unsetting of indoor group address	Stop	Displayed when error is detected	

◎: Flash ○: Go on ●: Go off

◎ : Flash ○ : Go on ● : Go off

Wireless sensor lamp display			Wired control	Diagnostic function			Judgement and measures
Operation	Timer	Ready	Check code	Cause of operation	Status of air conditiner	Condition	
◎	●	◎	L09	Unset indoor capacity	Stop	Displayed when error is detected	1. Set the indoor capacity (DN=I1)
●	◎	●	L29	Outdoor unit and other errors ▪ Communication error between CDB and IPDU (coming-off connector) ▪ Heat sink temperature error (Detection of temp. over specified value)	Stop	Displayed when error is detected	1. Check cables of CDB and IPDU. 2. Abnormal overload operation of refrigerating cycle
◎	○	◎	L30	Abnormal outside interlock input	Stop	Displayed when error is detected	1. Check outside devices 2. Check indoor P.C. board
◎	○	◎	L31	Phase detection protective circuit operates (Normal models)	Operation continues. (compressor stops)	Displayed when error is detected	1. Check power phase order (reserved phase)/phase missing 2. Check outdoor P.C. board
No check code is displayed				Fan motor thermal protection	Stop	Displayed when error is detected	1. Check thermal relay off fan motor 2. Check indoor P.C. board
◎	●	◎	P03	Discharge temperature error ▪ Discharge temperature over specified value was detected	Stop	Displayed when error is detected	1. Check refrigerating cycle. (Gas leak) 2. Trouble of PMV 3. Check TD sensor
◎	●	◎	P04	High pressure protection error by TE sensor (Temperature over specified value was detected)	Stop	Displayed when error is detected	1. Overload operation of refrigerating cycle 2. Check outdoor temp. sensor (TE) 3. Check outdoor CDB P.C. board
●	◎	◎	P10	Float switch operation ▪ Disconnection, coming-off, defective float switch contactor of float circuit	Stop	Displayed when error is detected	1. Defect of drain pump 2. Clogging of drain pump 3. Check float switch 4. Check indoor P.C. board
●	◎	◎	P12	Indoor DC fan error	Stop	Displayed when error is detected	1. Defective detection of position 2. Over-current protection circuit of indoor fan driving unit operates 3. Lock of indoor fan 4. Check indoor P.C. board
◎	●	◎	P19	Error in 4-way valve system ▪ Indoor heat exchanger temperature lowered after start of heating operation	Stop (Automatic reset)	Displayed when error is detected	1. Check 4-way valve 2. Check indoor heat exchanger TC/TCJ sensor 3. Indoor P.C. board
◎	●	◎	P22	Outdoor DC fan error	Stop	Displayed when error is detected	1. Defective detection of position 2. Over-current protection circuit of outdoor fan driving unit operates 3. Lock of outdoor fan 4. Check outdoor CDB P.C. board
◎	●	◎	P26	Inverter over-current protective circuit operates (for a short time). Short voltage of main circuit operates.	Stop	Displayed when error is detected	1. Inverter immediately stops even if restarted: Compressor motor rare short 2. Check IPDU: Cabeling error
◎	●	◎	P29	IPDU position detection circuit error	Stop	Displayed when error is detected	1. Position detection circuit operates even if operating compressor by removing 3P connector: Replace IPDU
◎	●	◎	P31	Own unit stops while warning is output to other indoor units	Stop (Sub unit) (Automatic reset)	Displayed when error is detected	1. Judge sub unit while master unit is in [E03], [L03], [L07], [L08]. 2.Check indoor P.C. board

For an error mode detected in outdoor unit, the fan operates because sub unit of a group operation does not communicate with the outdoor unit.

Error mode detected by remote controller

◎: Flash ○: Go on ●: Go off

Wireless sensor lamp display			Wired remote-controller	Diagnostic function			Judgement and measures
Operation	Timer	Ready	Check code	Cause of operation	Status of air conditioner	Condition	
---	---	---	No check code is displayed. (Remote controller does not operate)	No communication with master indoor unit ▪ Remote controller cable is not correctly connected ▪ Power of indoor unit is not turned on ▪ Automatic address cannot be completed	Stop	---	Remote controller power error, defective indoor EEPROM ▪ Check remote controller inter-unit cables ▪ Check remote controller ▪ Check indoor power cables ▪ Check indoor P.C. board ▪ Check indoor EEPROM. (including socket insertion): Phenomenon of automatic address repetition occurred
◎	●	●	E01*2	No communication with indoor master unit ▪ Disconnection of inter-unit cable between remote controller and master indoor unit (detected at remote controller side)	Stop (Automatic restart) * When there is center, operation continues	Displayed when error is detected	Signal receiving of remote controller is defective 1. Check remote controller inter-unit cables 2. Check remote controller 3. Check indoor power cables 4. Check indoor P.C. board
◎	●	●	E02	Signal sending error to indoor unit (Detected at remote controller side)	Stop (Automatic restart) * When there is center, operation continues	Displayed when error is detected	Signal sending of remote controller is defective. 1. Check sending circuit inside of remote controller: Replace remote controller
◎	●	●	E09	Multiple master remote controllers are recognized. (Detected at remote controller side)	Stop (Sub unit continues operation)	Displayed when error is detected	1. Check there are multiple master units for 2 remote controllers (including wireless): Master unit is one and others are sub units
◎	○	◎	L20	Duplicated indoor central addresses on communication of central control system (Detected by central controller side)	Stop (Automatic restart)	Displayed when error is detected	1. Check address setup of central control system network (DN=03)

Error mode detected by central remote controller

◎: Flash ○: Go on ●: Go off

Wireless sensor lamp displayed			Wired remote controller	Diagnostic function			Judgement and measures
Operation	Timer	Ready	Check code	Cause of operation	Status of air conditioner	Condition	
---	---	---	C05	Sending error central remote controller	Operation continues	Displayed when error is detected	1. Check communication line/miscabling/check power of indoor unit 2. Check communication (U3, U4 terminals) 3. Check network adapter P.C. board 4. Check central controller (such as central control remote controller etc.) 5. Terminal resistance check (connection interface SW01)
----	---	---	C06	Receiving error in central remote controller	Operation continues	Displayed when error is detected	
----	---	---	P30	Differs according to error contents of unit with occurrence of alarm	Continuation/Stop (Based on a case)	Displayed when error is detected	Check the check code of corresponding unit by remote controller

Error Mode detected by LED on Outdoor P.C. Board

RAV-SM563AT-E, RAV-SM803AT-E, RAV-SM1103AT-E, RAV-SM1403AT-E, RAV-SP564AT-E, RAV-SP804AT-E, RAV-SP1104AT-E, RAV-SP1404AT-E
<SW801: LED display in BIT 1, BIT 2 OFF>

- When multiple errors are detected, the latest error is displayed.
- When LED display is O (Go on), there is the main cause of trouble on the objective part of control at CDB side and the unit stops.
- When LED display is ◎ (Flash), there is the main cause of trouble on the objective part of control at IPDU side and the unit stops.
- When case thermostat operates, the communication is interrupted on the serial circuit. If continuing the case thermostat operation, a serial communication error occurs because serial sending to the indoor unit is interrupted.

	Nr.	Item	Check code		LED display			
			Type A	Type B	D800 (red)	D801 (yellow)	D802 (yellow)	D803 (yellow)
CDB Side	1	TE Sensor error	F06	18	O	●	●	●
	2	TD Sensor error	F04	19	O	O	●	●
	3	TS Sensor error	F06	18	●	●	O	●
	4	TO Sensor error	F08	1B	●	O	●	●
	5	Discharge temp. error	P03	1E	●	O	O	●
	6	DC outdoor fan error	P22	1A	O	O	O	●
	7	Communication error between IPDU (abnormal stop)	L29	1C	O	●	●	O
	8	High-pressure release operation	P04	21	●	O	●	O

	9	EEPROM error	---	---	O	O	●	O
	10	Communication IPDU (No abnormal Stop)	---	---	●	●	O	O
IPDU Side	11	IGBT short-circuit protection	P26	14	◎	●	●	●
	12	Detection circuit error	P29	16	●	◎	●	●
	13	Current sensor error	H03	17	◎	◎	●	●
	14	Comp. Lock error	H02	1D	●	●	◎	●
	15	Comp. breakdown	H01	1F	◎	●	◎	●

O: Go on ●: Go off ◎: Flash (5Hz)

<<Check code>>

The check codes are classified into Type A and Type B according to the used remote controller.
Be sure to check the remote controller which you use.
Type A :
Neutral 2-cores type wired remote controller such as RBC-AMT32E, RBC-AS21E, RBC-AMS41E, RBC-AMS51E-ES and wireless remote controller kit such as TCB-AX21U (W)-E2

RBC-SR1-PE, RBC-SR2-PE, such as central control remote controller RBC-CR64-PE

Important Codes 7-segment display

SMMSi and Mini - SMMS

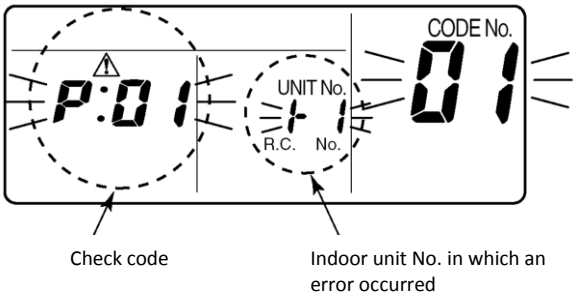
SW01	SW02	SW03	
1	1	1	press SW15 > for 5 sec. = automatic address setting
1	1	1	Error data
1	2	3	System capacity in HP
1	3	3	Number of outdoor units
1	4	3	A: Number of indoor units B:Number of indoor units connected in cooling mode
1	5	3	A: Number of indoor units B:Number of indoor units connected in heating mode
2	1	2	Clear System / indoor unit/group address: Confirm that the 7-segment display indicates “A.d.buS” and turn SW04 ON for more than 5 seconds.
2	2	2	Clear central control address: „A.d.nEt“ > and turn SW04 ON for more than 5 seconds.
2	5	1	Cooling test operation >press SW04 5 sec. = „-C“
2	6	1	Heating test operation > press SW04 5 sec. = „-H“
2	11	1	Pump-down function > press SW04 5 sec.
2	16	1	Clearing error: „Er“ > press SW04 5 sec. > „CL“=cleared
2	14	2	Add indoor units to a refrigerant cycle

Troubleshooting S-MMSi device

Confirmation and check

When trouble occurred on the air conditioner, the check code and the indoor unit No. are displayed on the display section of the remote controller.
The check code is displayed while the air conditioner operates.

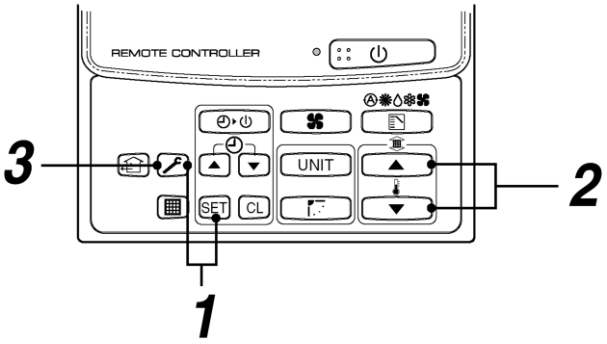
If the display has disappeared, operate the air conditioner and check the error based upon the following “Confirmation of error history”

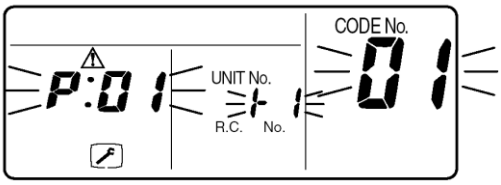


Confirmation of error history

When a trouble occurred on the air conditioner, the error history can be confirmed with the following procedure. (Up to 4 error histories are stored in memory.)

This history can be confirmed from either operating status or stop status.



Procedure	Description	
1	When pushing SET and buttons simultaneously for 4 seconds or more, the below display appears. If [Service Check] is displayed, the mode enters in the error history mode. ▪ [01: Error history order] is displayed in code number window ▪ [Check code] is displayed in check code window. ▪ [Indoor unit address with error] is displayed in UNIT No.	
2	Every pushing temp. set ▲, ▼ buttons, the error histories stored in the memory are displayed in order. The numbers in item code indicates item code [01] (latest) to [04] (oldest) **CAUTION:** Do not push CL, button because all the error histories of the indoor unit will be deleted	
3	After confirmation, push button to return to the usual display	

Testing methods

On the remote controller (Main remote control, central remote controller) and the interface board of the outdoor unit (I / F) is an LCD display (remote control) or a 7-segment display (interface board) to indicate the particular function.
There you have the opportunity to check the function. With the help of self-diagnosis problems or equipment failure can be easily found by using the following table.

List of faulty codes

The following list includes all error codes. With this list you can find the content which has to be tested of each unit

- check with the remote control unit for the area: See "Main remote controller display" in the list.
- Examination of outdoor unit: See "7-segment display, outdoor unit" in the list.
- check with the central AI-NET remote controller: See "AI-NET central remote control" in the list.
- Test with an infrared remote control for indoor unit: See "Sensor block display of receiving unit" in the list.

Terminology

○: flaming, ☼: flashing, ●: OFF
AI-NET: Artificial intelligence
IPDU: Intelligent Power Drive Unit
ALT: Alternate flashing of two LEDs
SIM: Simultaneous flashing of two LEDs
Error due to central monitoring TCC-LINK detected

Check-code				Wireless sensor			Check code name	Detected position
Main remote controller	Outdoor 7-segment display		AI-NET-central control remote controller	Sensor block display on the receiver				
		Sub-code		operation timer ready		flash		
E01	---	---	---	☼ ● ●			Communication error between indoor and remote controller (Detected at remote controller side)	Remote controller
E02	---	---	---	☼ ● ●			Remote controller sending error	Remote controller
E03	---	---	97	☼ ● ●			Communication error between indoor and remote controller (detected at indoor side)	Indoor unit
E04	---	---	04	● ● ☼			Indoor/Outdoor communication circuit error (Detected at indoor side)	Indoor unit
E06	E06	No. of indoor units which received signal normally	04	● ● ☼			Decreased number of indoor units	I/F
---	E07	---	---	● ● ☼			Indoor/Outdoor communication circuit error (Detected at outdoor side)	I/F
E08	E08	Duplicated indoor address	96	☼ ● ●			Duplicated indoor address	Indoor / I/F
E09	---	---	99	☼ ● ●			Duplicated master remote contollers	Remote controller
E10	---	---	CF	☼ ● ●			Communication error between indoor P.C. board assembly	Indoor unit
E12	E12	01: 02 Indoor/Outdoor communication 02: Between outdoors communication	42	☼ ● ●			Automatic address start error	I/F
E15	E15	---	42	● ● ☼			No corresponding indoor unit during automatic address	I/F
E16	E16	00: over capacity 01: No. of connected-units	89	● ● ☼			No. of connected indoor units / over capacity	I/F
E18	---	---	97,99	☼ ● ●			Communication error between indoor header and follower units	Indoor unit
E19	E19	00: No header unit 02: Two or more header units	96	● ● ☼			Outdoor header unit quantity error	I/F
E20	E20		42	● ● ☼			Other line unit connected during automatic address	I/F
E23	E23	---	15	● ● ☼			Communication sending error between outdoor units	I/F
E25	E25	---	15	● ● ☼			Duplicated outdoor follower address setup	I/F
E26	E26	No. of normally received outdoor unis	15	● ● ☼			Decreased number of connected outdoor unis	I/F
E28	E28	No. of detected outdoor units	d2	● ● ☼			Outdoor follower unit error	I/F
E31	E31	01: IPDU1-error 02: IPDU2-error 03: IPDU1 2 error 04: Fan IPDU-error 05: IPDU + Fan IPDU-error 06: IPDU2 + fan IPDU-error 07: all IPDUs error	CF	● ● ☼			IPDU communication error	I/F

Main remote controler	Check-code		AI-NET- central control remote controller	Wireless sensor				Check code name	Detected position
	Outdoor 7-segment display			Sensor block display on the receiver					
		Sub-code		operation	timer	ready	Flash		
F01	---	---	0F	¤	¤	●	ALT	Indoor TCJ sensor error	Indoor unit
F02	---	---	0d	¤	¤	●	ALT	Indoor TC2 sensor error	Indoor unit
F03	---	---	93	¤	¤	●	ALT	Indoor TC1 sensor error	Indoor unit
F04	F04	---	19	¤	¤	○	ALT	TD1 sensor error	I/F
F05	F05	---	A1	¤	¤	○	ALT	TD2-sensor error	I/F
F06	F06	---	18	¤	¤	○	ALT	TE1-sensor error	I/F
F07	F07	---	18	¤	¤	○	ALT	TL-sensor error	I/F
F08	F08	---	1b	¤	¤	○	ALT	TO-sensor error	I/F
F10	---	---	OC	¤	¤	●	ALT	Indoor TA sensor error	Indoor unit
F12	F12	---	A2	¤	¤	○	ALT	TS1-sensor error	I/F
F13	F13	01: Comp. 1 side 02: Comp. 2 side	43	¤	¤	○	ALT	TH-sensor error	IPDU
F15	F15	---	18	¤	¤	○	ALT	Outdoor temp sensor miscabling (TE, TL)	I/F
F16	F16	---	43	¤	¤	○	ALT	Outdoor pressure sensor miscabling (Pd, Ps)	I/F
F23	F23	---	43	¤	¤	○	ALT	Ps-sensor error	I/F
F24	F24	---	43	¤	¤	○	ALT	Pd-sensor error	I/F
F29	---	---	12	¤	¤	●	SIM	Indoor other error	Indoor
F31	F31	---	1C	¤	¤	○	SIM	Outdoor EEPROM error	I/F
H01	H01	01: Comp. 1 side 02: Comp. 2 side	IF	●	¤	●		Compressor breakdown	IPDU
H02	H02	01: Comp. 1 side 02: Comp. 2 side	1d	●	¤	●		Compressor error (lock) MG-SW error OCR operation	MG-switch IPDU Over current relay
H03	H03	01: Comp. 1 side 02: Comp. 2 side	17	●	¤	●		Current detection circuit system error	IPDU
H04	H04	---	44	●	¤	●		Compressor 1 case thermo operation	I/F
H06	H06	---	20	●	¤	●		Low pressure protective operation	I/F
H07	H07	---	d7	●	¤	●		Protection for oil level drop detection	I/F
H08	H08	01: TK1 sensor error 02: TK2 sensor error 03: TK3 sensor error 04: TK4 sensor error	d4	●	¤	●		Oil level detective temp sensor error	I/F
H14	H14	---	44	●	¤	●		Compressor 2 case thermo operation	I/F
H16	H16	01: TK1 oil circuit system error 02: TK2 oil circuit system error 03: TK3 oil circuit system error 04: TK4 oil circuit system error	d7	●	¤	●		Oil level detective circuit system error MG-SW error OCR operation	I/F MG-switch Over current relay
L03	---	---	96	●	¤	●	SIM	Duplicated indoor center units	Indoor
L04	L04	---	96	¤	○	¤	SIM	Duplicated outdoor line address	I/F
L05	---	---	96	¤	●	¤	SIM	Duplicated indoor units with priority (Display on indoor unit with priority)	I/F
L06	L06	No. of indoor units with priority	96	¤	●	¤	SIM	Duplicated indoor units with priority (Displayed on the unit other than indoor unit with priority)	I/F
L07	---	---	99	¤	●	¤	SIM	Group line in individual indoor unit	Indoor
L08	L08	---	99	¤	●	¤	SIM	Indoor group/address unset	Indoor
L09	---	---	46	¤	●	¤	SIM	Indoor capacity unset	Indoor
L10	L10	---	88	¤	○	¤	SIM	Outdoor capacity unset	I/F
L20	L20	---	98	¤	○	¤	SIM	Duplicated central control addresses	AI-NET, Indoor
L28	L28	---	46	¤	○	¤	SIM	Quantity over of connected outdoor units	I/F
L29	L29	01: IPDU1-error 02: IPDU2-error 03: IPDU3-error 04: Fan IPDU-error 05: IPDU1 + Fan IPDU-error 06: IPDU2 + Fan IPDU-error 07: All IPDUs error	CF	¤	○	¤	SIM	IPDU quantity error	I/F
L30	L30	Detected indoor address	b6	¤	○	¤	SIM	Interlock in indoor unit form outside	Indoor
---	L31	---	---	---				Extended IC (Integrated Circuit) Error	I/F

Main remote controller	Check Code		AI-NET-central control remote controller	Wireless sensor				Check code name	Detected position
	Outdoor 7-segment display			Sensor block display on the receiver					
		Sub-Code		operation	timer	ready	Flash		
P01	P01	---	11	●	¤	¤	ALT	Indoor fan motor error	Indoor
P03	P03	---	1E	¤	●	¤	ALT	Discharge temp TD1 error	I/F
P04	P04	01: Comp. 1 side 02: Comp. 2 side	21	¤	●	¤	ALT	Actuation of high-pressure SW	IPDU
P05	P05	01: power supply open phase 02: power supply negative phase	AF	¤	●	¤	ALT	Open phase negativ phase	I/F
P07	P07	01: Comp. 1 side 02: Comp. 2 side	IC	¤	●	¤	ALT	Heat sink overheat error	IPDU, I/F
P10	P10	Indoor address with trouble	Ob	●	¤	¤	ALT	Indoor overflow error	Indoor
P12	P12	---	11	●	¤	¤	ALT	Indoor fan motor error	Indoor
P13	P13	---	47	●	¤	¤	ALT	Outdoor liquid back detection error	I/F
P15	P15	01: TS-condition 02: TD-condition	AE	¤	●	¤	ALT	Gas leak detection (TS1 condition)	I/F
P17	P17	---	bb	¤	●	¤	ALT	Discharge temp. TD2 error	I/F
P19	P19	Detected outdoor unit No.	O8	¤	●	¤	ALT	4-way valve operation error	I/F
P20	P20	---	22	¤	●	¤	ALT	High-pressure protective operation	I/F
P22	P22	-0 : IGBT-shortage -1 : Position detection circuit error -3 : Motor lock error -C : TH sensor temp error -D : TH-sensor error -E : VDC-error	1A	¤	●	¤	ALT	Outdoor fan IPDU error	IPDU
P26	P26	01: Comp. 1 side 02: Comp. 2 side	14	¤	●	¤	ALT	G-Tr short-circuit protection error	IPDU
P29	P29	01: Comp. 1 side 02: Comp. 2 side	16	¤	●	¤	ALT	Compressor postition detection circuit error	IPDU
P31	P31	---	47	¤	●	¤	ALT	Other indoor error (Group follower unit error)	Indoor
---	---	---	b7	alarm				Error Indoor group	AI-NET
---	---	---	97	---				AI-NET-communication error	AI-NET
---	---	---	99	---				Duplicated network adaptors	AI-NET

Error detected by TCC-LINK central control device

Display on central control device	Check code		AI-NET-central control remote controller	Wireless sensor		Check code name	Detected position
	Outdoor 7-segment display			Sensor block display on the receiver			
		Sub-code		operation timer ready	Falash		
C05	---	---	---	---		TCC-LINK central control device transmission error	TCC-LINK
C06	---	---	---	---		TCC-LINK central control device receiving error	TCC-LINK
C12	---	---	---	---		Interface batch alarm of general-purpose control devices	Gerneral purpose device I/F
P30	Differs according to error contents of the with alarm					Follower unit error of group control	TCC-LINK
	---	---	(L20 is displayed)			Duplicate central control address	

Terminology

TCC-LINK: TOSHIBA Carrier Communication Link

MiNi SMMS: Check Code an Check Position Displayed on the Remote Controller and Outdoor Unit (7-Segment Display of Interface)

Check Code				Detected position	Check code name	Status	Error detection condition	Check item (position)
Wired remote controller	Outdoor 7-Segment display		AI-NET central contr. remote controller					
	Check code	Sub-code						
E01	---	---	---	Remote controller	Communication error between indoor and remote controller (Detected at remote controller side)	Corresponding unit only stops	Communication interrupted between indoor P.C. board and remote controller	▪Check remote controller inter-unit cable (A/B). ▪Check disconnection, connector contact error ▪Check indoor power supply ▪Check indoor P.C. board error ▪Check remote controller address setup. (When two remote controllers operate) ▪Check remote controller P.C. board
E02	---	---	---	Remote controller	Remote controller sending error	Corresponding unit only stops	Signal could not be sent from remote controller to indoor unit	▪Check the communication wire of remote controller: Exchange remote controller
E03	---	---	97	Indoor Unit	Communication error between indoor and remote controller (Detected at indoor side)	Corresponding unit only stops	No communication from remote controller (including wireless) and communication adapter	▪Check remote controller and communication adaptor wiring
E04	---	---	4	Indoor Unit	Indoor/Outdoor communication circuit error (Detected at indoor side)	Corresponding unit only stops	Indoor unit does not receive communication from outdoor unit	▪Check power-ON order of indoor/outdoor ▪Check indoor address setup ▪Check inter-unit cabling between indoor and outdoor ▪Check outdoor end terminal resistance setup (SW30-2)
E06	E06	No of indoor units which received signal normally	4	I/F	Decreased number of indoor units	All stop	When signal is not sent for a certain period from the indoor unit which has been used to send signals, [E6] is normally displayed	▪Check the power supply of indoor unit (Power-ON) ▪Check connection of communication line between indoor and outdoor ▪Check connector connection for communication in indoor P.C. board ▪Check connector connection for communication in outdoor P.C. board ▪Check indoor P.C. board failure ▪Check outdoor P.C. board (I/F) failure
---	E07	---	---	I/F	Indoor/Outdoor communication circuit error (Detected at outdoor side)	All stop	Transmission from outdoor to indoor cannot continue for 30 seconds	▪Check outdoor terminator resistor setup (SW30-2) ▪Check the communication between indoor and outdoor
E08	E08	Duplicated indoor addresses	96	Indoor I/F	Duplicated indoor addresses	All stop	Multiple indoor unit address setup are duplicated	▪Check indoor address ▪Check the change of remote controller connection (Group/individual) after setup of indoor address
E09	---	---	99	Remote controller	Duplicated master remote controllers	Corresponding unit only stops	In 2-remote controller control (including wireless), both are setup as master (Header indoor unit stops and other indoor unit is operating)	▪Check remote controller setup ▪Check remote controller P.C. board
E10	---	---	CF	Indoor Unit	Communication error between indoor P.C. board assembly	Corresponding unit only stops	There is any trouble in power line	Indoor P.C. board failure

Check Code				Detected position	Check code name	Status	Error detection condition	Check item (position)
Wired remote controller	Outdoor 7-segment display		AI-NET central control remote controller					
	Check code	Sub-code						
E12	E12	01: Indoor/outdoor communication 02: between outdoors communications	42	I/F	Automatic address start error	All stop	▪When indoor automatic address started, other refrigerant circuit system was setting automatic address ▪When outdoor automatic address started, indoor automatic address was executed	Setup the address again after disconnecting communication with other refrigerant circuit system
E15	E15	---	42	I/F	No corresponding indoor unit during automatic address	All stop	Indoor unit is not found when indoor automatic address start was set up	▪Check remote controller and communication adaptor wiring
E16	E16	00: Capacity over 01 to: No. of connected units	89	I/F	No. Of connected indoor units/ Capacity over	All stop	▪Total capacity of indoor units exceeded 135% of total outdoor capacity ▪No. Of connected indoor units are more than 48 units **[Note]** If this code appears after backup setup of outdoor unit trouble, set up "No capacity-over detection". **Setup method of "No capacity-over detection":** Turn on SW09/Bit2 on I/F P.C. board of outdoor header unit	▪Check the connection capacity of indoor unit ▪Check the HP capacity of indoor unit ▪Check the indoor/outdoor capacity setup ▪Check the No. of connected indoor units ▪Check the outdoor I/F P.C. board error
E18	---	---	97,99	Indoor unit	Communication error between indoor header and follower units	Corresponding unit only stops	Regular communication between indoor header and follower units	▪Check cable of the remote controller ▪Check the power cabling of indoor ▪Check P.C. board of indoor
E19	E19	00: No. Header unit 02: Two or more header units	96	I/F	Outdoor header unit quantity error	All stop	▪There are multiple outdoor header unit line 1 ▪There is none outdoor header unit in line 1	The outdoor unit connected with communication cable between indoor and outdoor (U1.U2) is the outdoor header unit ▪Check connection of communication line between indoor and outdoor ▪Check outdoor P.C. board (I/F) error
E20	E20	01: Connection of outdoor of other line 02: Connection of indoor of other line	42	I/F	Other line unit connected during automatic address	All stop	Unit of other line was connected when indoor automatic address started	Separate the cable between lines according to automatic address setup method in „Address setup"
E23	E23	---	15	I/F	Communication sending error between outdoor units	All stop	Transmission of other outdoor unit was unavailable for 30 seconds or more.	In this model, only one outdoor unit is provided to one refrigerant line. Be sure to check there is no communication connection with outdoor unit in the other refrigerant line.
E25	E25	---	15	I/F	Duplicated outdoor follower address setup	All stop	Outdoor addresses manually set up are duplicated	**Note** Do not set up the outdoor address manually
E31	E31	01: Comp IPDU error 02: Fan 1 IPDU error 03: Comp+Fan 1IPDU error 04: Fan 2 IPDU error 05: Comp+Fan 2 IPDU error 07: All IPDU error or communication error between IPDU and I/F P.C. board or outdoor I/F P.C. board error	CF	I/F	IPDU communication error	All stop	Communication of each IPDU (P.C. board) in inverter box interrupted	▪Check connection of communication connector and disconnection between IPDU and I/F P.C. board ▪Check outdoor P.C. board (I/F, IPDU, Fan IPDU) error ▪Check external noise

Check code				Detected position	Check Code name	Status	Error detection condition	Check item (position)
Wired remote controller	Outdoor 7-segment display		AI-NET central control remote controller					
	Check code	Sub-code						
F01	---	---	OF	Indoor unit	Indoor TCJ sensor error	Coresponding unit only stops	▪Resistance value of sensor is infinite or zero (Open/Short)	▪Check connection/cabling of TCJ sensor connector ▪Check characteristics of TCJ sensor resistance value ▪Check indoor P.C. board error
F02	---	---	Od	Indoor unit	Indoor TC2 sensor error	Coresponding unit only stops	▪Resistance value of sensor is infinite or zero (Open/Short)	▪Check connection/cabling of TC2 sensor connector ▪Check characteristics of TC2 sensor resistance value ▪Check indoor P.C. board error
F03	---	---	93	Indoor unit	Indoor TC1 Sensor error	Coresponding unit only stops	▪Resistance value of sensor is infinite or zero (Open/Short)	▪Check connection/cabling of TC1 sensor connector ▪Check characteristics of TC1 sensor resistance value ▪Check indoor P.C. board error
F04	F04	---	19	I/F	TD1 sensor error	All stop	▪Resistance value of sensor is infinite or zero (Open/Short)	▪Check connection of TD1 sensor connector ▪Check characteristics of TD1 sensor resistance value ▪Check indoor P.C. board I/F error
F06	F06	---	18	I/F	TE1 sensor error	All stop	▪Resistance value of sensor is infinite or zero (Open/Short)	▪Check connection of TE1 sensor connector ▪Check characteristics of TE1 sensor resistance value ▪Check indoor P.C. board I/F error
F07	F07	---	18	I/F	TL sensor error	All stop	▪Resistance value of sensor is infinite or zero (Open/Short)	▪Check connection of TL sensor connector ▪Check characteristics of TL sensor resistance value ▪Check outdoor P.C. board (I/F) error
F08	F08	---	1b	I/F	TO sensor error	All stop	▪Resistance value of sensor is infinite or zero (Open/Short)	▪Check connection of TO sensor connector ▪Check characteristics of TO sensor resistance value ▪Check outdoor P.C. board (I/F) error
F10	---	---	OC	Indoor unit	Indoor TA sensor error	Coresponding unit only stops	▪Resistance value of sensor is infinite or zero (Open/Short)	▪Check connection/cabling of TA sensor connector ▪Check characteristics of TA sensor resistance value ▪Check indoor P.C. board error
F12	F12	01: TS1	A2	I/F	TS1 sensor error	All stop	▪Resistance value of sensor is infinite or zero (Open/Short)	▪Check connection of TS1 sensor connector ▪Check characteristics of TS1 sensor resistance value ▪Check outdoor P.C. board (I/F) error
F13	F13	01: Compressor side 1	A3	IPDU	TH sensor error	All stop	▪Resistance value of sensor is infinite or zero (Open/Short)	▪IGBT built-in temp. sensor error Exchange IPDU P.C. board
F15	F15	---	18	I/F	Outdoor temp sensor miscabling (TE1, TL)	All stop	During operation of compressor in HEAT mode, the TE1 detection temp was higher than that of TL by the specified value continued for 3 minutes or more	▪Check installation of TE1 sensor and TL sensor ▪Check characteristics of TE1 and TL sensor resistance value ▪Check outdoor P.C. board (I/F) error
F16	F16	---	43	I/F	Outdoor pressure sensor miscabling (Pd, Ps)	All stop	High pressure Pd sensor and low-pressure Ps sensor were exchanged, or output voltages of both sensors are zero	▪Check connection of high-pressure Pd sensor connector ▪Check connection of low-pressure Ps sensor connector ▪Check pressure sensor Pd and Ps error ▪Check outdoor P.C. board (I/F) error ▪Check compression error of compressor

Check code				Detected position	Check code name	Status	Error detection condition	Check Item (position)
Wired remote controller	Outdoor 7-segment display		AI-NET central control remote controller					
	Check code	Sub-code						
F23	F23	---	43	I/F	Ps sensor error	All stop	Output voltage of Ps sensor was zero	▪Misconnection of Ps sensor and Pd sensor connectors ▪Check connection of Ps sensor connector ▪Check Ps sensor error ▪Check compression error of compressor ▪Check 4-way valve error ▪Check outdoor P.C. board (I/F) error ▪Check SV4 circuit error
F24	F24	---	43	I/F	Pd sensor error	All stop	Output voltage of Pd sensor was zero (Sensor Open) Pd >4.15MPa during stop of compressor	▪Check connection of Pd sensor connector ▪Check Pd sensor error ▪Check outdoor P.C. board (I/F) error
F29	---	---	12	Indoor	Indoor other error	Corresponding unit only stops	Indoor P.C. board did not operate normally	▪Check indoor P.C. board error (EEPROM error).
F31	F31	---	1C	I/F	Outdoor EEPROM error	All stop (*1)	Outdoor P.C. board (I/F) did not operate normally	▪Check power voltage ▪Check power noise ▪Check outdoor P.C. board (I/F) error
H01	H01	01: Compressor side 1	1F	IPDU	Compressor breakdown	All stop	Inverter current detection circuit detected over-current and stopped	▪Check power voltage (AC220-240V +/- 10%) ▪Check compressor error ▪Check cause of abnormal overload operation ▪Check outdoor P.C. board (IPDU) error
H02	H02	01: Compressor side 1	1d	IPDU	Compressor error (lock)	All stop	Over-current was detected several seconds after header compressor had started	▪Check compressor error ▪Check power voltage (AC380-10%, 415V+10%) ▪Check cable of compressor and phase-missing ▪Check connector/terminal connection on IPDU P.C. board Check conduction of case heater (Check activation error due to liquid stagnation in compressor) ▪Check outdoor P.C. board (IPDU) error
H03	H03	01: Compressor side 1	17	IPDU	Current detection circuit system error	All stop	While header compressor stopped, current flowed more than the specified current and was detected	▪Check cabling of current detection circuit system ▪Check outdoor P.C. board (IPDU) error
H04	H04	---	44	I/F	Compressor 1 case thermo operation	All stop	Compressor 1 case thermostat performed protective operation	▪Check compressor 1 case thermo circuit ▪Check full opening of service valve (Gas and liquid side) ▪Check outdoor PMV clogging. ▪Check SV4 circuit leakage ▪Check miscabling/misinstallation of SV4 ▪Check valve open status of indoor PMV ▪Check 4-way valve error ▪Check refrigerant shortage ▪Check SV5 leak

(*1) all stop only in case of the header unit.

Check code				Detected position	Check code name	Status	Error detection condition	Check item (position)
Wired remote controller	Outdoor 7-segment display		AI-NET central control remote controller					
	Check code	Sub-code						
H06	H06	---	20	I/F	Low pressure protective operation	All stop	Low pressure Ps detected operation lower than 0.02MPa	▪ Check full opening of service valve. (Gas liquid side) ▪ Check outdoor PMV clogging. ▪ Check SV2 circuit and SV4 circuit error ▪ Check low-pressure Ps sensor error ▪ Check indoor air filter clogging ▪ Check valve open of indoor PMV ▪ Check refrigerant pipe clogging ▪ Check outdoor fan operating. (In heating mode) ▪ Check refrigerant shortage ▪ Check 4-way valve error (Reversed error
L03	---	---	96	Indoor	Duplicated indoor center units	Corresponding unit only stops	There are multiple center units in a group	▪ Check indoor address ▪ Check the change of remote controller connection (Group/Individual) after indoor address setup
L04	L04	---	96	I/F	Duplicated indoor line address	All stop	Line address setup is duplicated against the outdoor unit in different refrigerant pipe system	▪ Check the line address
L05	---	---	96	I/F	Duplicated indoor units with priority (Displayed on indoor unit with priority)	All stop	Indoor units with priority were duplicated	▪ Check display of indoor unit
L06	L06	No. of indoor units with priority	96	I/F	Duplicated indoor units with priority (Displayed on the unit other than indoor unit with priority)	All stop	Indoor units with priority were duplicated	▪ Check display of indoor unit with priority and outdoor unit
L07	---	---	99	Indoor	Group line in individual indoor unit	Corresponding unit only stops	At least one indoor unit connected to a group existed in the individual indoor units	▪ Check indoor address
L08	L08	---	99	Indoor	Indoor group / address unset	Corresponding unit only stops	Address was not yet set up	▪ Check indoor address **Note:** After installation, this code is displayed when the power is firstly turned on
L09	---	---	46	Indoor	Indoor capacity unset	Corresponding unit only stops	Indoor unit capacity was unset.	Set up indoor capacity (DN=11)
L10	L10	---	88	I/F	Outdoor capacity unset	All stop	On the I/F P.C. board for service, jumper line was not cut according to the model	Check model setup on outdoor I/F P.C. board A´ssy for service
L20	---	---	98	AI-NET, Indoor	Duplicated central control addresses	All stop	Duplicated central control addresses	▪ Check central control address ▪ Check network adapter P.C. board (In case of AI-NET)
L28	L28	---	46	I/F	Quantity over of connected outdoor units	All stop	There were more than four outdoor units	▪ Check No. of connected outdoor units (Max. 4 units per 1 system) ▪ Check communication line between outdoor units. ▪ Check outdoor P.C. board (I/F) error

Check Code				Detected position	Check code name	Status	Error detection condition	Chech item (position)
Main remote controller	Outdoor 7-segment display		AI-NET central control remote controller					
	Check code	Sub-code						
L29	L29	01:Comp IPDU1 error 02: Fan 1 IPDU error 03: Comp+Fan 1 IPDU error 04: Fan 2 IPDU error 05: Comp+Fan2 IPDU error 06: Fan 1 + Fan2 IPDU error 07: All IPDU error on communication error between IPDU and I/F P.C. board, or outdoor I/F P.C. board error	CF	I/F	IPDU quantity error	All stop	No. Of IPDU units detected when power was turned on were less	▪Check model setup for outdoor I/F service P.C. board ▪Check connection of UART communication connector ▪Check IPDU, fan IPDU , and I/F P.C. board error **Note:** UART: Universal Asynchronous Receiver Transmitter
L30	L30	Detected indoor address	b6	Indoor	Interlock in indoor unit form outside	Corresponding unit only stops	Outside error input terminal detected signal to (CN80) for more 1 minute	▪Outside device is connected to connector (CN80): 1) Check outside device error 2) Check indoor P.C. board ▪Outside device is not connected to connector (CN80) 1) Check indoor P.C. board error
---	L31	---	---	I/F	Extended IC (Intergrated Circuit) error	Operation continues	P.C. board (I/F) parts error	▪Check indoor (I/F) P.C. board
P01	---	---	11	Indoor	Indoor fan motor error	Corresponding unit only stops		▪Check the lock of fan motor (AC fan) ▪Check cabling
P03	P03	---	1E	I/F	Discharge temp TD1 error	All stop	Discharge temp (TD1) exceeded 115°C	▪Check full opening of outdoor service valves (Gas side, liquid side) ▪Check clogging of outdoor PMV ▪Check characteristics of TD1 sensor resistance value ▪Check refrigerant shortage ▪Check 4-way valve error ▪Check leakage of SV4 circuit ▪Check SV4 circuit (Miscabling and misinstalation of SV4) ▪Check leakage of SV5 circuit
P04	P04	01: Compressor 1 side	21	I/F	Actuation of high-pressure SW	All stop	High-pressure SW actuated	▪Check Pd pressure sensor error ▪Check full opening of outdoor service valves (Gas side, Liquid side) ▪Check outdoor fan error ▪Check outdoor fan motor error ▪Check clogging of outdoor PMV ▪Check clogging of indoor/outdoor heat exchangers ▪Check short-circuiting of outdoor suction/discharge air. ▪Check clogging of SV2 circuit ▪Check outdoor P.C. board (I/F) error ▪Check indoor fan system error. (Cause of airvolume decrease) ▪Check opening of indoor PMV ▪Check miscabling of communication line between indoor and outdoor ▪Check operation error of check valve of discharge pipe ▪Check SV4 valve circuit ▪Check SV5 valve circuit ▪Chek refrigerant overcharge
P07	P07	01: Compressor 1 side	1C	IPDU I/F	Heat sink overheat error	All stop	IGBT built-in temp sensor (TH) was overheated	▪Check power voltage ▪Check outdoor fan system error ▪Check clogging of heat sink cooling duct ▪Check fixation between IGBT and heat sink. (Check screwing and contact) ▪Check IPDU error (IGBT built-in temp sensor (TH) error)

Check Code				Detected position	Check code name	Status	Error detection condition	Chech item (position)
Wired remote controller	Outdoor 7-segment display		AI-NET central control remote controller					
	Check code	Sub - code						
P10	P10	Indoor address with trouble	Ob	Indoor	Indoor overflow error	All stop	▪Float switch operated ▪Float switch circuit disconnected or the connector came off	▪Check the float switch connector ▪Check operation of drain pump unit ▪Check the drain pump circuit ▪Check clogging of drain pipe ▪Check indoor P.C. board error
P12	---	---	11	Indoor	Indoor fan motor error	Corresponding unit only stops	▪The value of motor speed deviated from target value was detected for certain time ▪Over-current protection operated	▪Check connection of fan connector and wiring ▪Check fan motor error ▪Check indoor P.C. board error ▪Check influence of outside air control ▪Check indoor type code (DN=10) and the capacity code (DN=11)
The standard ducted unit air conditioner utilizes a direct current (DC) indoor fan motor that features current limiting protection. In the event power is not isolated prior to service, the protective control circuit will activate and stop the unit operating. The check code P12 will be displayed on the remote controller-once service work has been completed, this code can be cleared by switching off the electrical isolation device of the indoor unit and pressing the operation stop button on the remote controller to reset the system.								
P13	P13	---	47	I/F	Outdoor liquid back detection error	All stop	**In Heating:** While the system is operating in HEAT mode, outdoor PMV of which opening degree was 100p or less for a certain time.	▪Check full close operation of outdoor PMV ▪Check Pd and Ps sensor error ▪Check clogging of SV2 circuit ▪Check clogging of 4.way valve error circuit ▪Check outdoor P.C. board (I/F) error ▪Check capillary clogging of oil return circuit from oil separator ▪Check TS sensor error
P15	P15	01: TS condition	AE	I/F	Gas leak detection (TS1 condition)	All stop	Suction temp exceeded the judgement standard temp for 10 minutes or more. **TS error judgement standard temperature:** In cooling operation: 60°C or higher In heating operation: 40°C or higher	▪Check refrigerant shortage ▪Check full open of outdoor service valves (gas side, liquid side) ▪Check outdoor PMV clogging ▪Check characteristics of TS1 sensor resistance value ▪Check 4-way valve error ▪Check leakage of SV4 circuit ▪Check leakage of SV5 circuit
		02: TD condition	AE	I/F	Gas leak detection (TD condition)	All stop	Discharge temperature TD1 or TD2 was continuously 108°C or higher for 10 minutes	▪Check refrigerant shortage ▪Check outdoor PMV clogging ▪Check characteristics of TD1, TD2 sensor resistance value ▪Check indoor air filter clogging ▪Check pipe clogging ▪Check SV4 circuit (Valve leakage, misinstallation) ▪Check mispiping of discharge gas/suction gas main pipe
P17	P17	---	bb	I/F	Discharge temp TD2 error	All stop	Discharge Temperature (TD2) exceeded 115°C	▪Check full opening of outdoor service valves (gas side, liquid side) ▪Check clogging of outdoor PMV ▪Check characteristics of TD2 sensor resistance value ▪Check 4-way valve error ▪Check leakage of SV4 circuit ▪Check SV4 circuit ▪Check leakage of SV5 valve circuit ▪Check mispiping of discharge gas/suction gas main pipe

Check code				Detected position	Check code name	Status	Error detection condition	Check item (position)
Wired remote controller	Outdoor 7-segment display		AI-NET Central control remote controller					
	Check Code	Sub-code						
P19	P19	Detected outdoor unit No.	8	I/F	4-way valve operation error	All stop	When abnormal refrigerating cycle data was detected in heating	▪Error of 4-way valve error ▪Check coil error and connector connection of 4-way valve ▪Check characteristics of TS1/TE1 sensor resistance value ▪Check characteristics of Pd, Ps pressure sensor output voltage ▪Check misconnection of TE1 and TL sensors
P20	P20	---	22	I/F	High pressure protective operation	All stop	Pd Sensor 3.6MPa or more	▪Check Pd pressure sensor error ▪Check full opening of service valves (Gas side, liquid side) ▪Check outdoor fan error ▪Check outdoor fan motor error ▪Check clogging of outdoor PMV ▪Check clogging of Indoor/Outdoor heat exchanger ▪Check air short circuiting in outdoor unit ▪Check clogging of SV2 circuit ▪Check outdoor P.C. board (I/F) error ▪Check indoor fan system error. (Cause of air volume decrease) ▪Check valve opening of indoor PMV ▪Check miscabling of communication line between indoor and outdoor ▪Check operation error of check valve of discharge pipe ▪Check circuit of gas balance SV4 valve ▪Check mispiping of discharge gas/suction gas main pipe ▪Check operation error of check valve of discharge gas pipe ▪Check clogging of circuit at auxiliary heat exchanger side (miswiring, disconnection, wiring missing) ▪Check circuit of SV5 valve ▪Check refrigerant overcharge
P22	P22	* A: Motor current detection	1A	FAN-IPDU	Outdoor fan IPDU error	All stop	**(Sub-code: * A)** ▪Short-circuit current was detected when 2 seconds or more passed after start time ▪Over-current was detected when 30 seconds or more passed after start time	▪Check power supply voltage ▪Check fan IPDU error
		* d: Motor lock error			G-Tr short- circuit protection error	All stop	**(Sub-code: * d)** ▪Abnormal current was detected within 30 seconds after start time	▪Check fan motor (lock, phase missing) ▪Check cause of abnormal overload at start time ▪Check connection of connector to fan motor
P26	P26	01: Compressor 1 side	14	IPDU		All stop	Instantaneous over-current was detected when compressor started	▪Check connector connection and wiring on IPDU P.C. board ▪Check compressor error and defect of compressor coil ▪Check outdoor P.C. board (IPDU) error
P29	P29	01: Compressor 1 side	16	IPDU	Compressor position detection circuit error	All stop	Position was not normally detected	▪Check connector connection and wiring ▪Check compressor error and defect of compressor coil ▪Check P.C. board (IPDU) error
P31	---	---	47	Indoor	Other indoor error (Group follower unit error)	Corresponding unit only stops	E07/L07/L03/L08 was detected when other indoor unit in the group was defective	▪Check indoor P.C. board

Error detected by TCC-LINK central control device

Check Code				Detected position	Check code name	Status	Error detection condition	Check item (position)
Display central control device	Outdoor 7-segment display		AI-NET Central control remote controller					
	Check code	Sub-code						
C05	---		---	TCC-LINK	TCC-Link central control device transmission error	Operation continued	Signal is not transmit from central control device	▪Check central control device error ▪Check communication line error of central control device ▪Check setup of terminator resistor
C06	---		---		TCC-Link central control device receiving error	Operation continued	Signal is not received from central control device	▪Check central control device error ▪Check communication line error of central control device ▪Check setup of terminator resistor ▪Check the power of connecting destination connected device ▪Check P.C. board error of the connected device
C12	---		---	HA control interface	Interface batch alarm of HA control interface	Operation continued	Error was input in HA control device control interface	▪Check error input
P30	Differs according to error contents of the with alarm			TCC-LINK	Follower unit error of group control	Operation continued	An error occurred in follower unit of the group control. ([P30] is displayed only on the central control remote controller)	▪Check the check code of the unit with alarm
	(L20 is displayed)				Duplicate central control address	Operation continued	Central control addresses were duplicated.	▪Check the address setup

Error detected by AI-NET central control device

Check code				Detected position	Check code name	Status	Error detection condition	Check item (position)
Main remote controller	Outdoor 7-segment display		AI-NET central control remote controller					
	Check code	Sub-code						
---	---	---	97	AI-NET	AI-NET communication system error	Operation continued	E07/L07/L03/L08 was detected when other indoor unit in the group was defective	▪Check multiple network adaptors ▪Check wire and miscabling of remote controller: only one network adaptor can be connected to communication line of remote controller
---	---	---	99	AI-NET	Duplicated network adaptors	Operation continued	Multiple network adaptors were connected to communication line of remote controller (Detected at central controller side)	▪Check communication line, miscabling, and power of indoor unit ▪Check communication. (X,Y terminals) ▪Check network adaptor P.C. board ▪Check the central controller (Central control remote controller etc.)
---	---	---	b7	AI-NET	Error in indoor group	Operation continued	Error of follower unit in the group	▪Check follower unit in the group

* These errors are concerned to communication of remote controllers (A,B) and central system [AI-NET X,Y], and the main remote controller displays [E01], [E02], [E03], [E09], or [E18] in some cases and displays none in other cases according to the contents.

Changing DN Codes AMT31/32 (AMS41)

Valid: for all Toshiba RAV Digital and Super Digital Inverter (except Flexi) and all Mini SMMS and S-MMS devices!

Method:

1 Press simultaneously **SET + CL + TEST button** for 4 seconds or more.
(In a control group is the first digit indicated the address of the master device.)

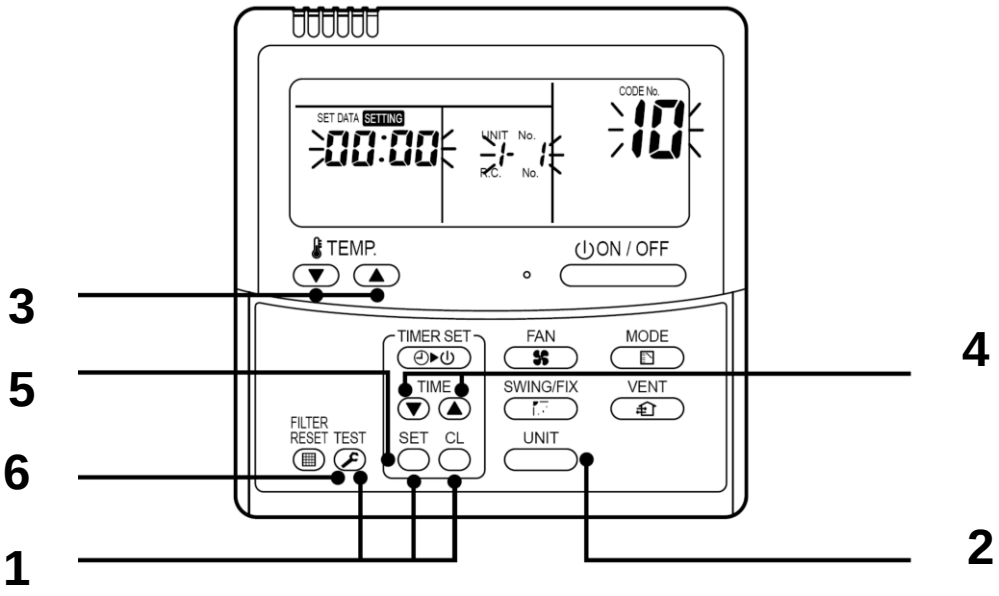
2 When you select a control group with the **UNIT button** you select the indoor unit, on which the value should be changed**.**
(The selected fan of the indoor unit turns ON.)

3 Use the button for the **temperature setting** for the **DN Code.**

4 Change with the **time setting button** the value of the **DN Code.**

5 Press **SET button** to confirm**.**

6 To save and to finish press **TEST button** to return to the usual display.



Changing DN Codes AMS 51

Valid: for all Toshiba RAV Digital and Super Digital Inverter (except Flexi) and all Mini SMMS
DN Codes AMS 51

Valid: for all Toshiba RAV Digital and Super Digital Inverter (except Flexi) and all Mini SMMS
and S-MMS as well S-MMSi devices!

Method:

1 Press the **Menu button** to reach the Menu

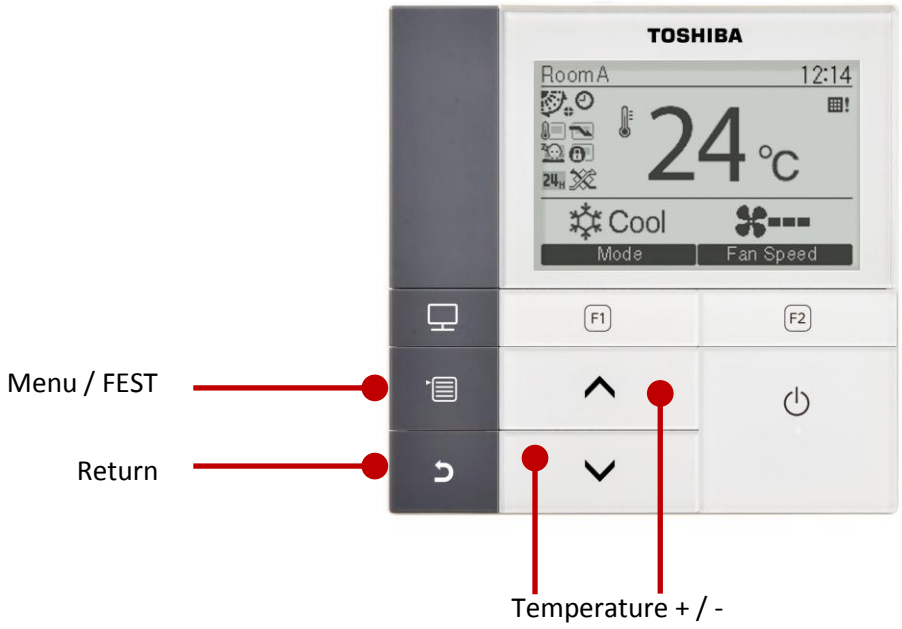
2 Press the **Menu button** and the **temperature down button** for simultaneously 5 seconds to reach the next submenu

3 Press the **temperature up/down button** to point **„DN setting** „and confirm with **“F2”**

4 To select the changing Code use the arrow keys and change between both fields with the**„F1“** and **„F2“ button**

5 After changed the code press **„FEST” button** to save

6 To finish press the **„return” button**



DN (device) Code Chart

DN- Code	Name	Description	
01	Filter alarm time	Filter sign displayed after selected time has elapsed - or by external pressure switch (CN70)	0000=inaktiv 0001=150 hrs. 0002=250 hrs. 0003=500 hrs. 0004=1000 hrs. 0005=ext. switch
02	Dirty Environment	Allows filter alarm time to be halved if used in a dirty environment	0000=Standard 0001=Dirty
03	Network address	When unter network control	0001 to 0064 available 0099= Factory setting
04	Priority setting for remote controller	0= normal 1=Priority (This remote has priority of mode setting)	0000=Standard 0001=Priority
06	Stratification control	Increase effective return air temperature setting in heating mode (0 to 10K) Default +2°C	0000 to 0010
0d	AUTO Mode	Deactivating of Auto mode	0000=available 0001=not available
0F	Controller set up	Heat pump or cooling only	0000=heat pump 0001=cooling only
2d	Only heating	Deactivating of COOL & DRY	0008=heating only
10	Indoor Type		0000=1-way Cassette 0001=4-way Cassette 0004='1' series duct 0006='0' series duct 0007=ceiling Tba: '1' series hi-wall
11	Indoor unit capacity	0000 will generate a fault	0009=056 0015=1100 0012=080 0017=1400
12	Outdoor unit	Each indoor unit is automatically addressed - this value may be set manually but it must be done via the wired controller – on an individual basis. Settings are 0001 to 0030	0099=factory setting 0001=outdoor unit 1 0002= outdoor unit 2
13	System number	Indoor units connected to a common outdoor unit (e.g. twinned indoor units) will have the same system number – settings are 0001 to 0064. Automatically allocated – but may be manually overridden.	0099=factory setting 0001=indoor unit 1 0002= indoor unit 2
14	Group master/salve	Allows selection of master indoor unit within group. Automatically allocated – but may be manually overridden.	0099=factory setting 0000=Single indoor unit 0001=group master 0002=group slave
19	Louver functions	None, swing only, swing and auto (where applicable)	0000=disable 0001=swing only 0004=all options

DN- Code	Name	Description	
1b	Compressor on time	Compressor minimum on time 0=5 minutes 1= 4 minutes	0000=0 – 5 minutes 0001=1 – 4 minutes
1C	Thermo Shift	Thermal shift of Discharge Air in Cooling Mode	-005= 5°C 0000=0°C -004=4°C 0010=10°C
1E	Heat-cool c/o range	Changeover sensitivity in automatic mode	0000: 0 K 0010=10 K
1F	Max. Setting	Cooling mode maximum temperature setting (18-29)	29°C
20	Min. Setting	Cooling mode minimum temperature setting (18-29)	18°C
21	Max. Setting	Heating mode maximum temperature setting (18-29)	29°C
22	Min. Setting	Heating mode minimum temperature setting (18-29)	18°C
23	Max. Setting	Dry mode maximum temperature setting (18-29)	
24	Min. Setting	Dry mode minimum temperature setting (18-29)	
25	Max. Setting	Auto mode maximum temperature setting (18-29)	29°C
26	Min. Setting	Auto mode minimum temperature setting (18-29)	18°C
28	Auto restart enable	Supplied as disabled	0000=disable 0001= enable
2A	Ext. error input (CN70)	Function assignment contact CN70. (Series 2 wall unit -> condensate pump)	0000=ext. filter input 0001=ext. alarm input 0002=ext. humidifier input (factory setting)
2E	HA connector(CN61)	Function assignment contact CN61 (HA terminal)	0000=off 0001=restart in the same mod, such as when switching off 0002=fire alarm input
31	Ext. fan control (CN32)	Activation of „FAN“ button on the controller	0000=off (factory setting) 0001=CN32 ON/OFF
32	Sensor location	Return air/room sensor OR in local controller	0000=return air sensor 0001=remote sensor
33	Temperatur unit	Display TS on controller	0000=°C 0001=°F
5d	Air flow correction	Used with high ceiling or applications with high sensible loads	0000=Standard 0006=ultra high air flow
60	Timer lock	Locks timer in wired local controller – maintaining last setting	0000=unlocked 0001=locked
62	Coander Effect	only at 4-way-cassette	0000=high air flow volume
8b	Heating correction		0000=None 0001=Correction

Check Code RAV Series (R407C / R22)

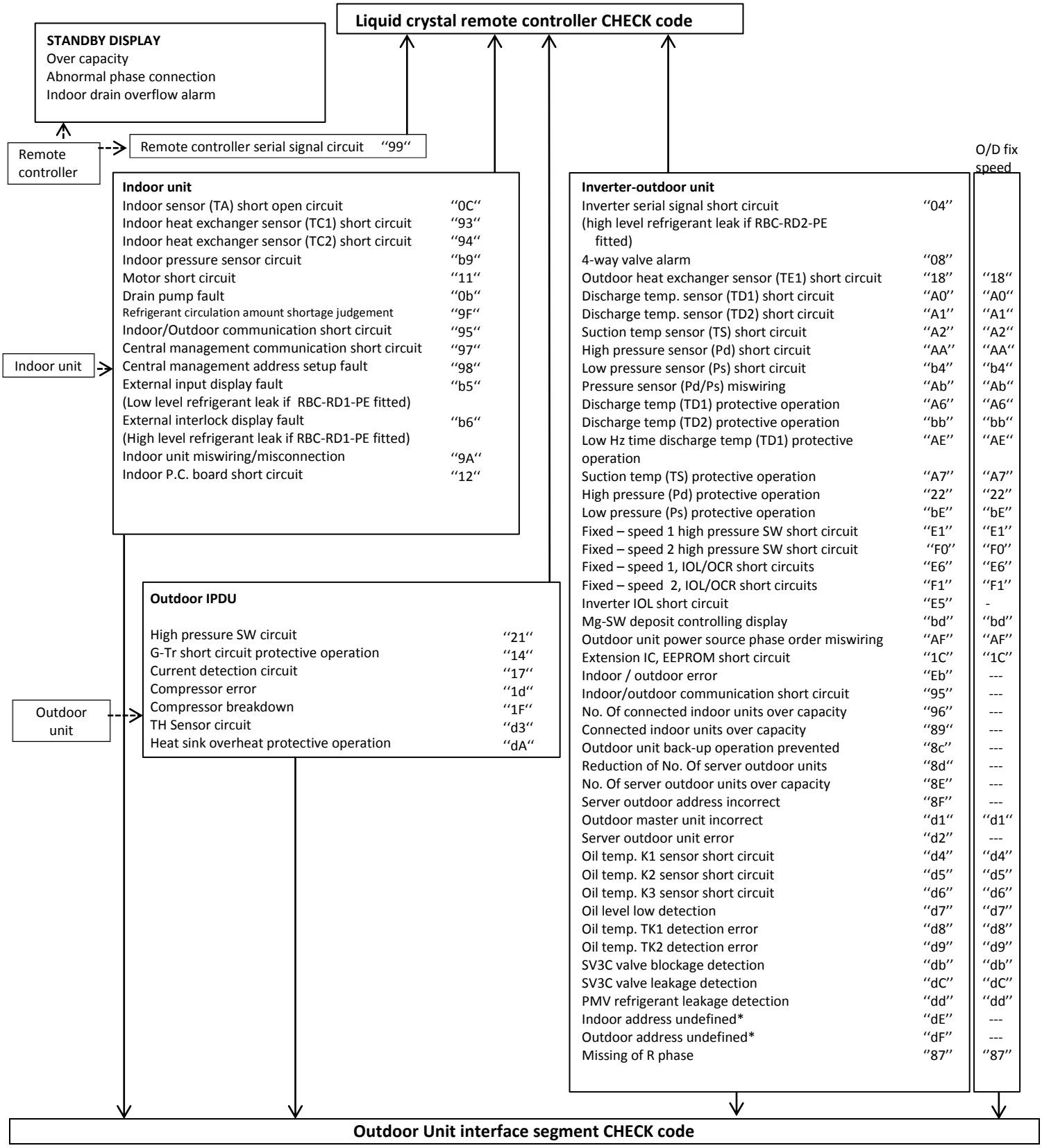
Do not turn off the power supply before reading the fault codes, doing so may clear the diagnostic memory.
Caution must be taken when removing the access covers, as high voltages are present. Fault diagnostics is available by pressing the check button on the remote controller.

Note: The first number displayed is a code for the number of compressor starts the indoor unit has requested. This number is displayed using the hexadecimal format.

Numbers displayed after the start number are fault codes.

CODE	FAULT	SYSTEM STATUS	CHECK
0C	TA Sensor open circuit	No cooling operation (Heating operation continuously – heat pumps)	Sensor Resistance 20°C=12.5 k 25°C=10 k
	TA Sensor short circuit	No heating operation – heat pumps (Cooling operation continuously)	Sensor Resistance 20°C=12.5 k 25°C=10 k
0d	TC Sensor open circuit	Indoor fan stays off in the heating mode	Sensor Resistance 20°C=12.5 k 25°C=10 k
	TC Sensor short circuit	Outdoor unit simulates high temperature release continually	Sensor Resistance 20°C=12.5 k 25°C=10 k
04	No communication Outdoor to Indoor	Indoor unit operates – outdoor unit does not	Interconnecting cables/isolator Outdoor transformer (240/12vac) Printed circuit Board
08	Reverse change temp.	Cooling o/p in Heat mode or Heating o/p in Cool mode	Operation of 4-way valve, energized For heating / TC Sensor
09	No change in temp. of indoor unit	Indoor unit operates	Compressor running not pumping / Klixon tripped. /For cross wiring
	Frost condition	Indoor fan low speed, no outdoor unit operation	Gas charge / pipe blockage Indoor air flow TC Sensor / For cross wiring
0B	Indoor water level	Indoor unit operates – outdoor unit does not	Lift pump operation. Condensed drain for blockage. Floats switch operation – break on rise
99	No communication Indoor to Rem. Con.	System stops	Interconnecting cables. Indoor is set up as a master. Only one master in a group
18	TE Sensor open circuit	System stops	Sensor Resistance 20°C=12.5 k 25°C=10 k
	TE Sensor short circuit	System stops	Sensor Resistance 20°C=12.5 k 25°C=10 k
19	TL or TD Sensor open circuit	System stops	Sensor Resistance TL 20°C=12.5 k TD 23 °C =53 k 25°C=10 k
	TL or TD Sensor short circuit	System stops	Sensor Resistance TL 20°C=12.5 k TD 23 °C =53 k 25°C=10 k
21	High Pressure Trip	System stops	Gas Charge – quantity & quality Pipe blockages Air flows
1E	High Discharge Temperature	System stops	Gas Charge – quantity & quality TE sensor Indoor unit air flow

Fault Codes – MMS R407C


Liquid crystal remote controller CHECK code
STANDBY DISPLAY
Over capacity
Abnormal phase connection
Indoor drain overflow alarm
Remote controller
Remote controller serial signal circuit ''99''
O/D fix speed
Indoor unit
Indoor unit
Indoor sensor (TA) short open circuit ''0C''
Indoor heat exchanger sensor (TC1) short circuit ''93''
Indoor heat exchanger sensor (TC2) short circuit ''94''
Indoor pressure sensor circuit ''b9''
Motor short circuit ''11''
Drain pump fault ''0b''
Refrigerant circulation amount shortage judgement ''9F''
Indoor/Outdoor communication short circuit ''95''
Central management communication short circuit ''97''
Central management address setup fault ''98''
External input display fault ''b5''
(Low level refrigerant leak if RBC-RD1-PE fitted)
External interlock display fault ''b6''
(High level refrigerant leak if RBC-RD1-PE fitted)
Indoor unit miswiring/misconnection ''9A''
Indoor P.C. board short circuit ''12''
Inverter-outdoor unit
Inverter serial signal short circuit ''04''
(high level refrigerant leak if RBC-RD2-PE fitted)
4-way valve alarm ''08''
Outdoor heat exchanger sensor (TE1) short circuit ''18'' ''18''
Discharge temp. sensor (TD1) short circuit ''A0'' ''A0''
Discharge temp. sensor (TD2) short circuit ''A1'' ''A1''
Suction temp sensor (TS) short circuit ''A2'' ''A2''
High pressure sensor (Pd) short circuit ''AA'' ''AA''
Low pressure sensor (Ps) short circuit ''b4'' ''b4''
Pressure sensor (Pd/Ps) miswiring ''Ab'' ''Ab''
Discharge temp (TD1) protective operation ''A6'' ''A6''
Discharge temp (TD2) protective operation ''bb'' ''bb''
Low Hz time discharge temp (TD1) protective operation ''AE'' ''AE''
Suction temp (TS) protective operation ''A7'' ''A7''
High pressure (Pd) protective operation ''22'' ''22''
Low pressure (Ps) protective operation ''bE'' ''bE''
Fixed – speed 1 high pressure SW short circuit ''E1'' ''E1''
Fixed – speed 2 high pressure SW short circuit ''F0'' ''F0''
Fixed – speed 1, IOL/OCR short circuits ''E6'' ''E6''
Fixed – speed 2, IOL/OCR short circuits ''F1'' ''F1''
Inverter IOL short circuit ''E5'' -
Mg-SW deposit controlling display ''bd'' ''bd''
Outdoor unit power source phase order miswiring ''AF'' ''AF''
Extension IC, EEPROM short circuit ''1C'' ''1C''
Indoor / outdoor error ''Eb'' ---
Indoor/outdoor communication short circuit ''95'' ---
No. Of connected indoor units over capacity ''96'' ---
Connected indoor units over capacity ''89'' ---
Outdoor unit back-up operation prevented ''8c'' ---
Reduction of No. Of server outdoor units ''8d'' ---
No. Of server outdoor units over capacity ''8E'' ---
Server outdoor address incorrect ''8F'' ---
Outdoor master unit incorrect ''d1'' ''d1''
Server outdoor unit error ''d2'' ---
Oil temp. K1 sensor short circuit ''d4'' ''d4''
Oil temp. K2 sensor short circuit ''d5'' ''d5''
Oil temp. K3 sensor short circuit ''d6'' ''d6''
Oil level low detection ''d7'' ''d7''
Oil temp. TK1 detection error ''d8'' ''d8''
Oil temp. TK2 detection error ''d9'' ''d9''
SV3C valve blockage detection ''db'' ''db''
SV3C valve leakage detection ''dC'' ''dC''
PMV refrigerant leakage detection ''dd'' ''dd''
Indoor address undefined* ''dE'' ---
Outdoor address undefined* ''dF'' ---
Missing of R phase ''87'' ''87''
Outdoor unit
Outdoor IPDU
High pressure SW circuit ''21''
G-Tr short circuit protective operation ''14''
Current detection circuit ''17''
Compressor error ''1d''
Compressor breakdown ''1F''
TH Sensor circuit ''d3''
Heat sink overheat protective operation ''dA''
Outdoor Unit interface segment CHECK code

*: No display on the remote controller

NOTE: To retrieve fault codes, ensure rotary switches 1, 2 and 3 on the outdoor interface PCB (MCC-1343-01) are all set to 1 (factory default setting).
Individual indoor Fault Codes can be retrieved by referring to page 49

Fault Codes – 2-Pipe Super Multi R407C

Do not turn off the power supply before reading the fault codes, doing so will clear the diagnostic memory. Caution must be taken when removing the access covers, as high voltages are present.
Fault diagnosis is available at three locations within the Air Conditioning system:

1. Remote Controller – press the check button
2. Multi Controller – rotate the display switch to position 1
3. Outdoor Unit – see following chart

Remote Controller press CHECK			**Multi Controller Switch position 1**			**Outdoor Unit Switch position 0**	
04	No communication Interface to Inverter	→	04	No communication Interface to Inverter		LED 5 off LED 6 on	No communication Interface to Inverter
04	No communication Multi C. to Outdoor	→	04	No communication Multi C. to Outdoor			
04	No communication Indoor to Multi C.						
0b	ID water level						
0C	TA Sensor Fault		88	M/C doesn´t recognize outdoor capacity		**Display Switch set to 8** (If lit….)	
0d	TC Sensor Fault		80	Th(A) Sensor Fault	←	LED 1	Th(A) Sensor Fault
08	Reverse change temp		81	Th(B) Sensor Fault	←	LED 2	Th(B) Sensor Fault
09	Frost or no temp change		82	Th(C) Sensor Fault	←	LED 3	Th(C) Sensor Fault
99	No communication Indoor to Rem. Con.		83	Th(D) Sensor Fault	←	LED 4	Th(D) Sensor Fault
15	Refer to Multi Con	→	84	Th(X) Sensor Fault	←	LED 5	Th(X) Sensor Fault
	Preheat/Defrost Falsh	→	0b	M/C Water level	←		M/C water level
			89	ID Codes set too high	←	LED 6	IG Codes set too high
				ID codes set to zero		LED 7	M/C 1 Sensor Fault
						LED 8	M/C 2 Sensor Fault
						Display switch set to 3 (If lit…)	
IC	Refer to outdoor	→	IC	Refer to outdoor	→	LED 1	ThD1 Sensor Fault
						LED 2	ThD2 Sensor Fault
						LED 3	ThS Sensor Fault
						LED 4	HP Trip, by sensor
						LED 5	Pd Sensor Fault
						LED 6	Discharge Pipe > 130°C
						LED 7	Suction Pipe > 40°C
						LED 8	Low Pressure Trip
						Inverter PCB SW01 set to Off/Off	
14	Refer to outdoor	→	14	Refer to outdoor	→	● ○ ○ ○	Low Inverter Voltage
1d	Refer to outdoor	→	1d	Refer to outdoor	→	○ ● ○ ○	High Inverter dc Current
1F	Refer to outdoor	→	1F	Refer to outdoor	→	○ ○ ● ○	High Inverter ac Current
18	Refer to outdoor	→	18	Refer to outdoor	→		ThE Sensor Fault
21	Refer to outdoor	→	21	Refer to outdoor	→	○ ○ ○ ●	Inverter HP Trip Inv. Comp. overheat
					→		Phase Rotation / DOL HP Trip / Overload Trip / DOL Comp. overheat

● = LED flashing ○ = LED lit

Fault Codes – 3-Pipe Super Multi

Do not turn off the power supply before reading the fault codes, doing so will clear the diagnostic memory. Caution must be taken when removing the access covers, as high voltages are present.
Fault diagnosis is available at three locations within the Air Conditioning system:

1. Remote Controller – Press the check button
2. Multi Controller – rotate the display switch to position 1
3. Outdoor Unit – see following chart:

Remote Controller press CHECK			Multi Controller Switch position 1			Outdoor Unit Switch position 2 & 0	
04	No communication Interface to Inverter	→	04	No communication Interface to Inverter	→	04	No communication Interface to Inverter
04	No communication Multi Controller to Outdoor	→	04	No communication Multi Controller to Outdoor			
04	No communication Indoor to Multi Controller						
0b	ID Water Level						
0C	TA Sensor Fault		88	M/C doesn´t recognize outdoor capacity			
0d	TC Sensor Fault		80	Th(A) Sensor Fault	←	80	Th(A) Sensor Fault
08	Reverse change temp		81	Th(B) Sensor Fault	←	81	Th(B) Sensor Fault
09	Frost or no temp change		82	Th(C) Sensor Fault	←	82	Th(C) Sensor Fault
99	No Communication Indoor to Rem. Con.		83	Th(D) Sensor Fault	←	83	Th(D) Sensor Fault
15	Refer to Multi Controller	→	84	Th(X) Sensor Fault	←	84	Th(X) Sensor Fault
	Preheat/Defrost Flash	↘	0b	M/C Water level	←	0b	M/C Water level
			89	ID Codes set too high	←	89	ID codes set too high
				ID Codes set to zero			

IC	Refer to Outdoor	→	IC	Refer to Outdoor	→	A0	ThD1 Sensor Fault
					→	A1	ThD2 Sensor Fault
					→	A2	ThS Sensor Fault
					→	A3	ThO Sensor Fault
					→	A5	ThE Sensor Fault
					→	A6	Discharge Pipe > 130°C
					→	A7	Suction Pipe > 40°C
					→	AA	Pressure Sensor Fault
					→	AE	Low Pressure Trip
14	Refer to Outdoor	→	14	Refer to Outdoor	→	14	Low Inverter Voltage
1d	Refer to Outdoor	→	1d	Refer to Outdoor	→	1d	High Inverter dc Current
1F	Refer to Outdoor	→	1F	Refer to Outdoor	→	1F	High Inverter ac Current
21	Refer to Outdoor	→	21	Refer to Outdoor	→	21	Inverter HP Trip Inv. Comp. overheat
						Ad	Phase Rotation / DOL HP Trip / Overload Trip / DOL Comp. overheat

MONITORING

Monitor functions – Display of:

- Temperature values
  (Indoor – and outdoor temperature, TO, TA, TC, Td, TS)
- Pressure values (Pd, Ps)
- PMV Status
- Compressor status (on/off) and power
- Total capacity of indoor and outdoor units
- Number of indoor and outdoor units

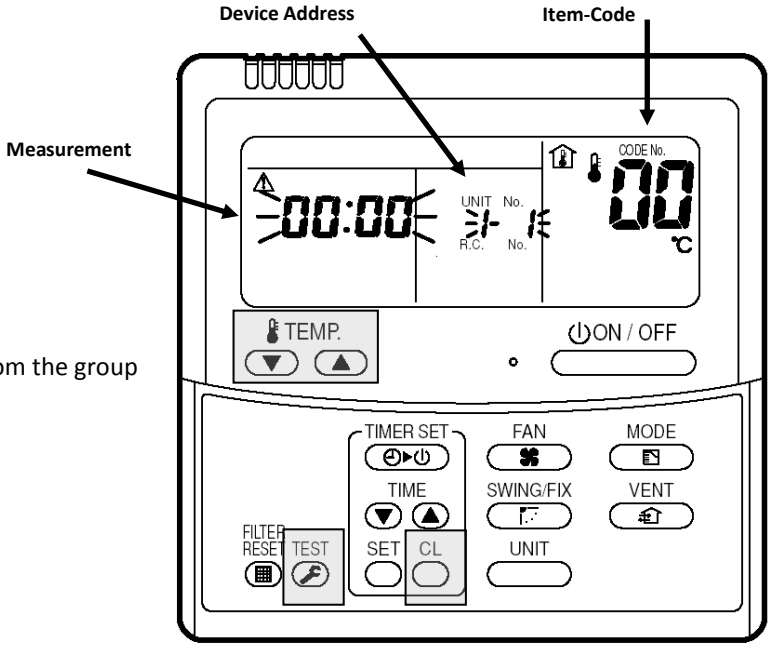
Function – available through:
Wired remote controller RBC-AMT32E (and previous model RBC-AMT21E, RBC-AMT41E)

Available for:

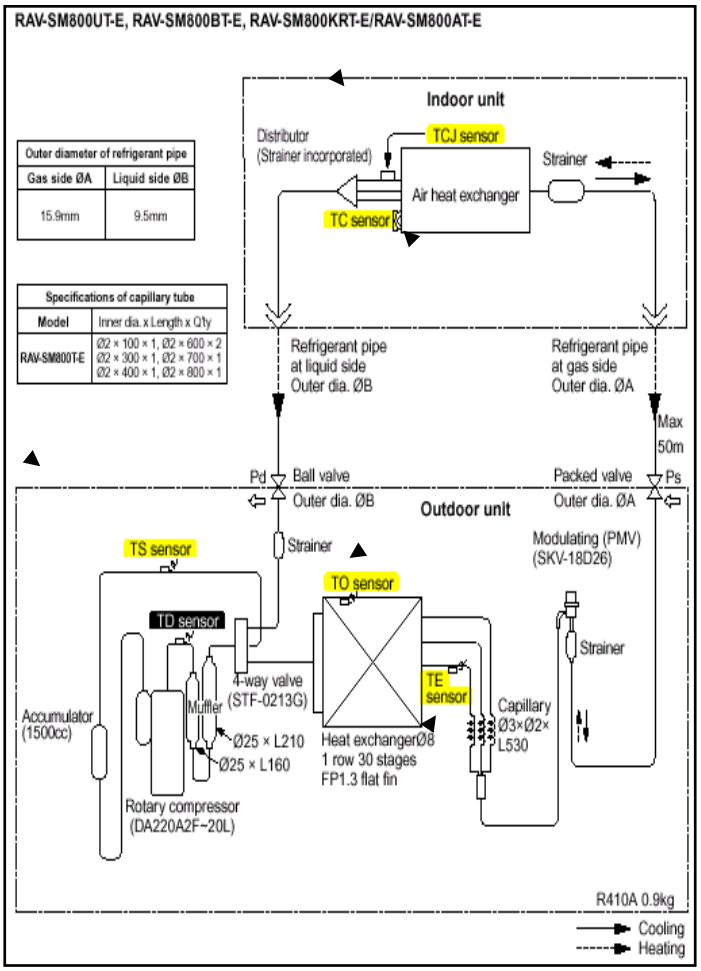
- Digital Inverter
- Super Digital Inverter
- MiNi SMMS
- S-MMSi
- S-HRM

Function

1. Press CL + TEST button for 4 seconds
2. Press TEMP. to switch to the second Item-Code (etc.)
   Press UNIT button to select the unit from the group
3. To finish press TEST button



Monitor functions for Digital Inverter (DI) and Super Digital Inverter (S-DI)



	Code	Display
Data of indoor units	**00**	Indoor Temperature
	01	Indoor Temperature (remote control)
	02	Indoor Temperature (TA)
	03	Heat exchanger temperature (TCJ)
	04	Heat exchanger temperature (TC)

	Code	Display
Data of outdoor units	**60**	Heat exchanger temperature (TE)
	61	Outdoor temperature (TO)
	62	Hot gas temperature (TS)
	63	Suction temperature (TD)
	64	-----
	65	Overheating temperature

Monitor functions for MiNi, SMMSi and S-HRM

	Code	System data	Unit	Display-output
Data of indoor unit (NOTE 2)	**00**	Indoor temp. (control temp.)	°C	
	01	Indoor temperature (remote controller)	°C	
	02	Inner part of intake (TA)	°C	x 1
	03	Inner part of register temp. (TCJ)	°C	x 1
	04	Inner part of register temp. (TC2)	°C	x 1
	05	Inner part of register temp. (TC1)	°C	x 1
	06	Inner part of hot gast temp. (Tf) (NOTE 1)	°C	x 1
	08	Inner part PMV angel of aperture	Pulse	x 1/10
System data	**0A**	Number of connected indoor units	piece	
	0b	PS capacity of connected indoor units	PS	x 10
	0C	Number of connected outdoor units	piece	
	0d	PS capacity of connected outdoor units	PS	x 10

	Code	System data	Unit	Display-output
Outdoor unit individual data (NOTE 4,5)	10	Compressor 1 hot gas temp. (Td1)	°C	x 1
	(11)	Compressor 2 hot gas temp. (Td2)	°C	x 1
	12	High pressure sensor (Pd)	MPa	x 100
	13	Low pressure sensor (Ps)	MPa	x 100
	14	Suction temp. (TS)	°C	x 1
	15	Outdoor heat exchanger temp. (TE)	°C	x 1
	16	Temp. Liquid line (TL)	°C	x 1
	17	Ambiente temperature (TO)	°C	x 1
	18	Overheating temp. (TU)	°C	x 1
	19	Compressor 1 power (1)	A	x 10
	(1A)	Compressor 2 power (I2)	A	x 10
	1b	PMV 1 + 2 aperture	Pulse	x 1/10
	1d	Compressor 1 – 2, ON/OFF	---	(NOTE 3)
	1E	Outdoor fan speed	---	0 to 31
	1F	Capacity outdoor unit	PS	x 1

(NOTE 1): Only a part of the indoor units were installed with a high pressure temp. sensors. This temperature is not displayed on other types.
(NOTE 2): When the units are connected to a group, only the data of the main indoor unit is displayed.
(NOTE 3): Only compressor 1 is ON. 10: Only compressor 2 is ON
11: Both compressors (1 and 2) are ON.

Overview CN-Connector

Function	Connector	Pin No.	Outline	Model name
Fan output	CN32	1,2	Ventilation control from RC	TCB-KBCN32VEE
Option output	CN60	1,2,3,4,5,6	Operation status signal output (Cooling, heating, fan, defrost, thermo-ON)	TCB-KBCN60OPE
HA Terminal	CN61	1,2,3,4,5,6	External ON/OFF, operation output, alarm output	TCB-KBCN61HAE
Option error input	CN70	1,2	Alarm display	TCB-KBCN70OAE
Demand input	CN73	1,2	Forced thermo-off control	TCB-KBCN73DEE
Outside error input	CN80	1,2,3	Alarm input (L30) & forced OFF	TCB-KBCN80EXE

Applicable indoor units:

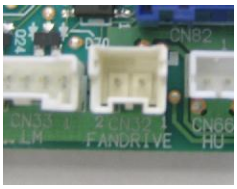
			Connector					
		TCB-KB	CN32VEE	CN60OPE	CN61HAE	CN70OAE	CN73DEE	CN80EXE
VRF	4-way	MMU-AP***1H	OK	OK	OK	OK	OK	OK
	60 x 60	MMU-AP***1MH	OK	OK	OK	OK	OK	OK
	2-way	MMU-AP***1WH	OK	OK	OK	OK	OK	OK
	1-way	MMU-AP***1YH	OK	OK	OK	OK	OK	OK
		MMU-AP***1SH	OK	OK	OK	OK	OK	OK
		MMU-AP***2SH	OK	OK	OK	OK	OK	OK
	Duct	MMD-AP***1BH	OK	OK	OK	OK	OK	OK
	Hi static	MMD-AP***1H	OK	OK	OK	OK	OK	OK
	Slim duct	MMD-AP***1SPH	OK	OK	OK	OK	OK	OK
	Ceiling	MMC-AP***1H	OK	OK	OK	OK	OK	OK
	Hi Wall	MMK-AP***1H	OK	OK	OK	OK	OK	OK
		MMK-AP***2H	OK	OK	OK	--	OK	OK
	Floor stand	MML-AP***1H	OK	OK	OK	OK	OK	OK
		MML-AP***1BH	OK	OK	OK	OK	OK	OK
		MMF-AP***1H	OK	OK	OK	OK	OK	OK
DI & S-DI	4-way	RAV-SM***UT-E	OK	OK	OK	OK	OK	OK
		RAV-SP***UT-E	OK	OK	OK	OK	OK	OK
	60 x 60	RAV-SM***MUT-E	OK	OK	OK	OK	OK	OK
	Duct	RAV-SM***BT-E	OK	OK	OK	OK	OK	OK
	Ceiling	RAV-SM***CT-E	OK	OK	OK	OK	OK	OK
	Flexi	RAV-SM***XT-E	--	--	--	--	--	--
	Hi wall	RAV-SM***0KRT-E	--	--	--	--	--	--
		RAV-SM***1/2KRT-E	OK	OK	OK	--	OK	OK

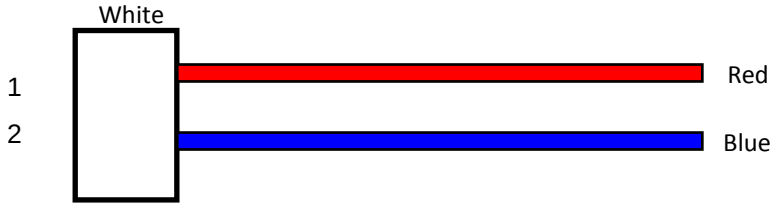
Specification of relay

Indoor Unit		Specification Relay
DC motor type	MMU-AP***1H MMU-AP***1MH MMU-AP***2SH MMD-AP***1BH MMD-AP***1SPH MMK-AP***2H MMC-AP***1H RAV-SM/SP***UT-E RAV-SM***MUT-E RAV-SM***CT-E RAV-SM***1BT-E RAV-SM**1/2KRT-E	Corresponds up to a relay in which rated current of the operation coil is approx**. 75mA**

Indoor Unit		Specification of Relay
AC motor type	MMU-AP***1WH MMU-AP***1YH MMU-AP***1SH MMD-AP***1H MML-AP***1H MML-AP***1BH MMF-AP***1H MMK-AP***1H RAV-SM***0BT-E *Flexi type (XT type) is not available for application*	Corresponds up to a relay in which rated current of the operation coil is approx. **16mA** (Does not correspond to a terminal block type relay on the market.)

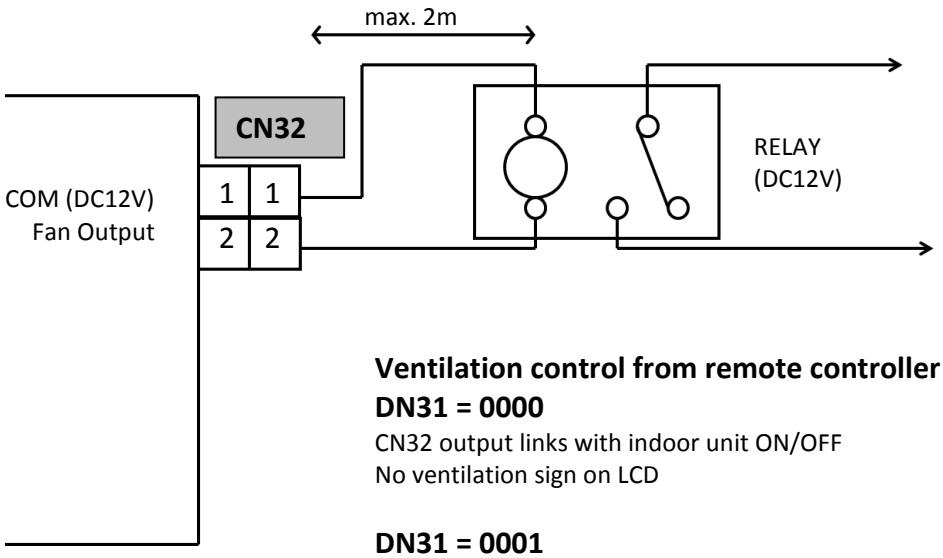
CN32 (TCB-KBCN32VEE)

1	DC12V (Common)	
2	Fan output (Open collector)	- Shipment setup (DN31 =0000) ON with indoor unit ON & OFF with indoor unit OFF are linked -Ventilation control (DN31 =0001) Individual ON/OFF control form ventilation button of remote controller RC ON → Ventilation ON (If already ON, ON remains) RC OFF → Ventilation OFF (If already OFF, OFF remains)



CN32 (Ventilation control)

Indoor P.C. Board



Ventilation control from remote controller

DN31 = 0000

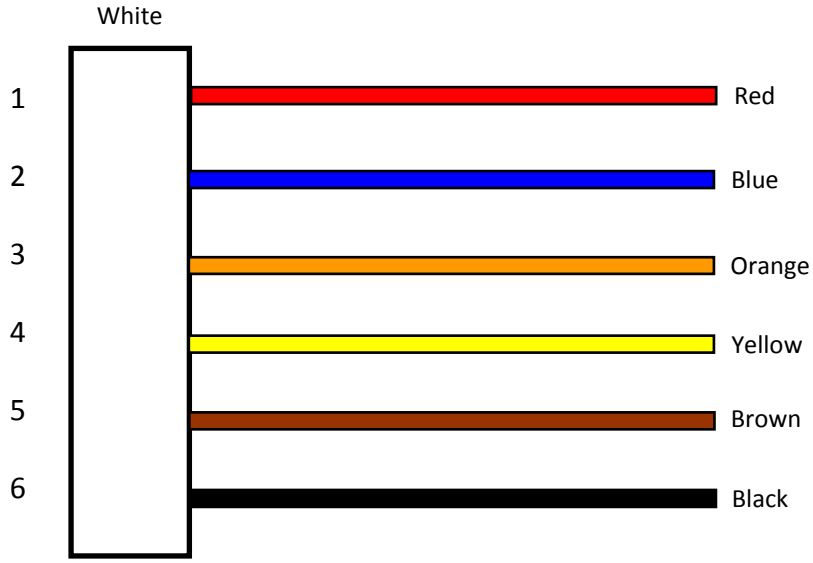
CN32 output links with indoor unit ON/OFF
No ventilation sign on LCD

DN31 = 0001

CN32 output links with indoor unit ON/OFF
Individual ON/OFF by „VENT“button
Ventilation sign on LCD

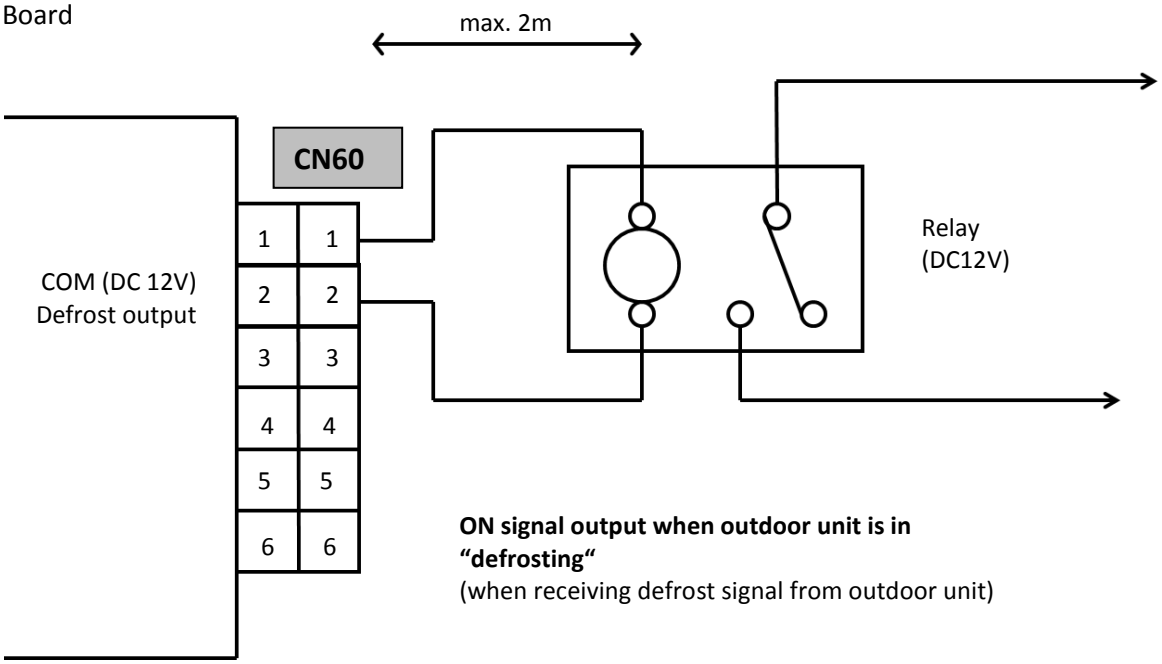
CN60 (TCB-KBCN60OPE)

1	DC12V (COM)	Common for Pin. 2 to 6
2	Defrost output (Open collector)	ON signal when outdoor unit is in defrosting (when receiving defrost signal from outdoor unit)
3	Thermo ON output (open collector)	ON signal when indoor unit is „thermo-ON“
4	Cooling output (Open collector)	ON when operation mode is cooling (Cooling, Dry, Cooling in Auto mode)
5	Heating output (Open collector)	ON when operation mode is heating (Heating, Heating in Auto mode)
6	Fan output (Open collector)	ON when indoor fan is ON (ex. Interlock cabling)



CN60 (Defrost output)

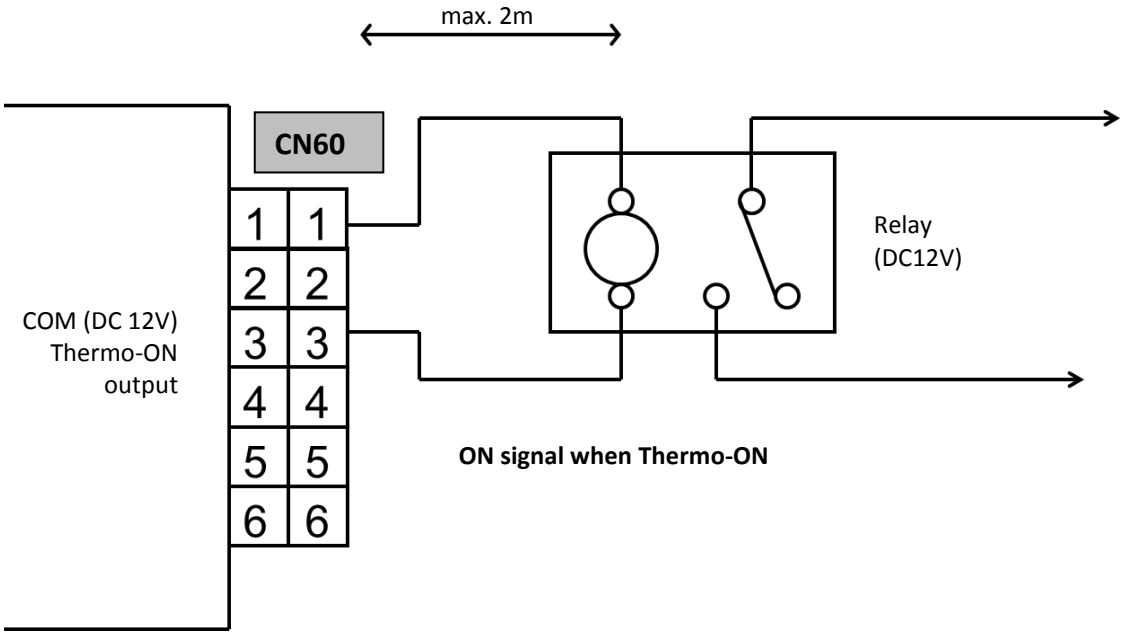
Indoor P.C. Board



ON signal output when outdoor unit is in "defrosting"
(when receiving defrost signal from outdoor unit)

CN60 (Thermo-ON output)

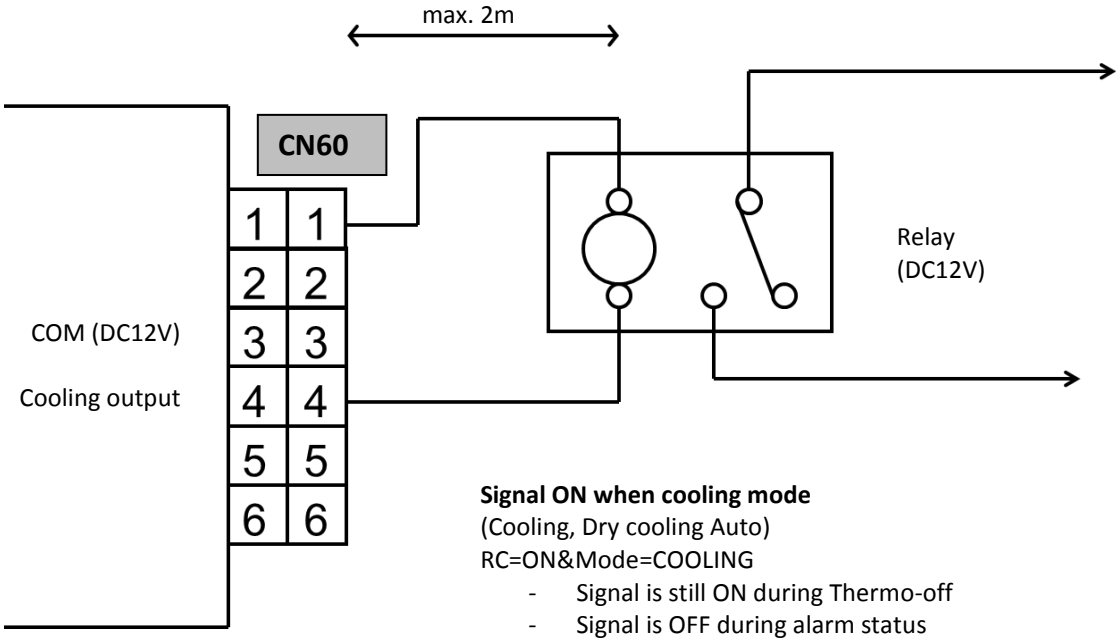
Indoor P.C. Board



ON signal when Thermo-ON

CN60 (Cooling output)

Indoor P.C. Board

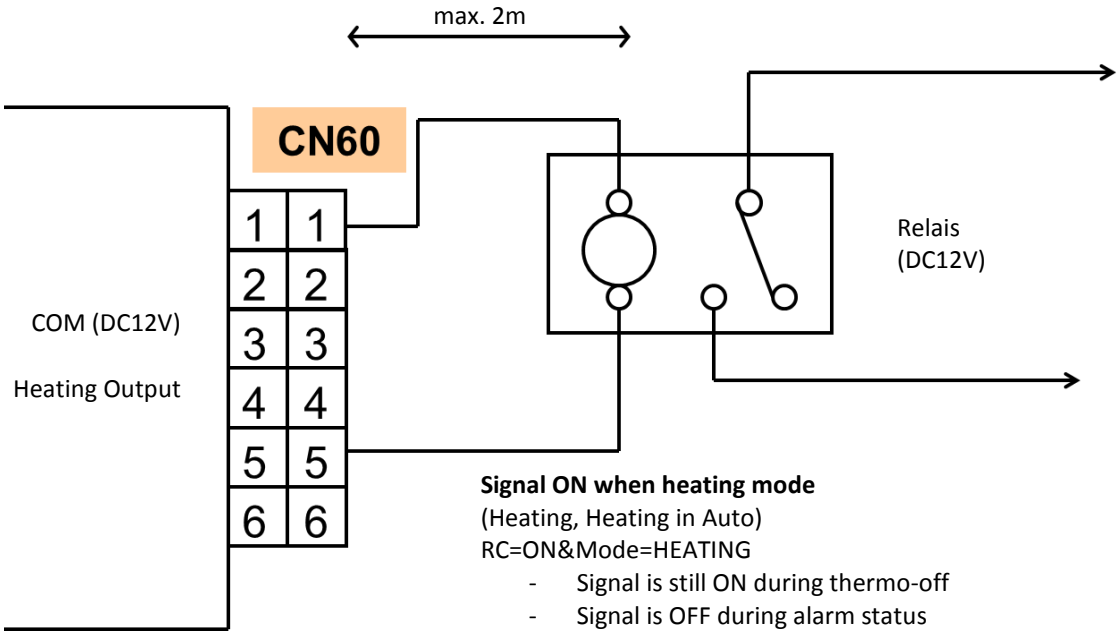


Signal ON when cooling mode
(Cooling, Dry cooling Auto)
RC=ON&Mode=COOLING

- Signal is still ON during Thermo-off
- Signal is OFF during alarm status

CN60 (Heating output)

Indoor P.C. Board

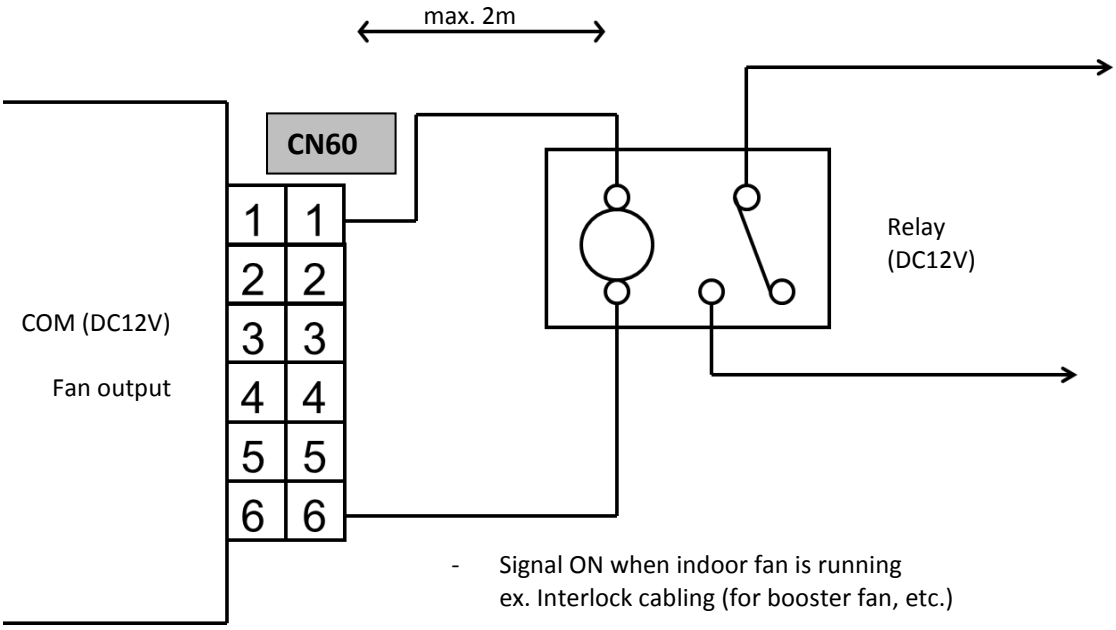


Signal ON when heating mode
(Heating, Heating in Auto)
RC=ON&Mode=HEATING

- Signal is still ON during thermo-off
- Signal is OFF during alarm status

CN60 (Fan output)

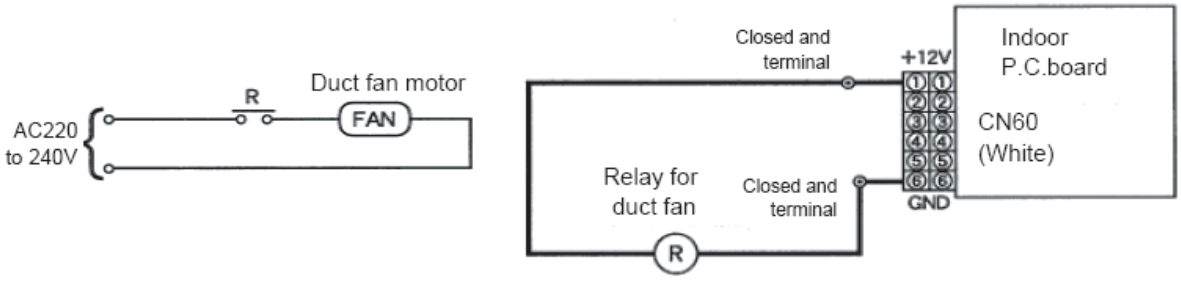
Indoor P.C. Board



- Signal ON when indoor fan is running
  ex. Interlock cabling (for booster fan, etc.)

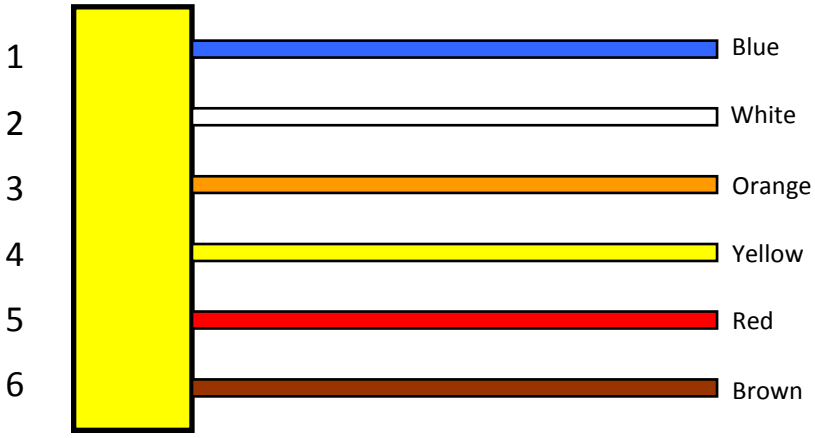
Signal ON when indoor fan is running

➔ Interlock cabling (with booster fan for fresh air intake, etc)



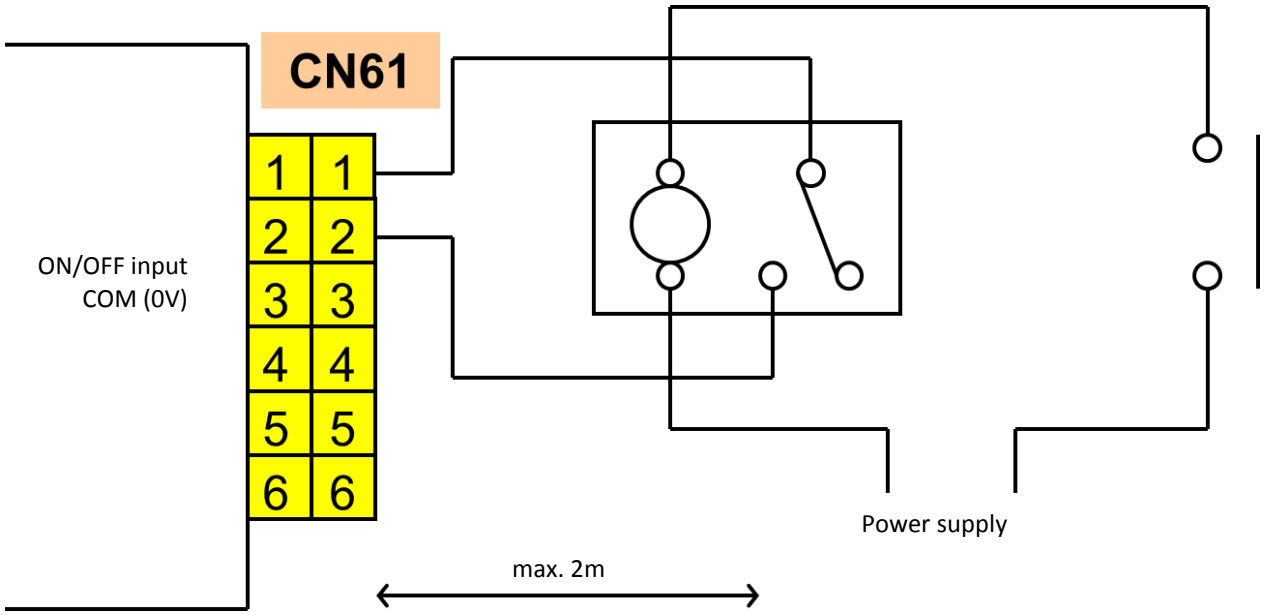
CN61 (TCB-KBCN61HAE)

1	ON/OFF input	External ON/OFF control (DN code 2E, J01)
2	0V (Common for Pin 1, 3)	
3	ON/OFF prohibition input	Remote controller ON/OFF prohibition is permitted / prohibited by input signal
4	Operation output (Open collector)	ON signal during „remote controller ON & No alarm“
5	DC 12V (Common for Pin 4, 6)	
6	Alarm output (Open collector)	ON signal during alarm output



CN61 (External ON/OFF)

Indoor P.C. Board

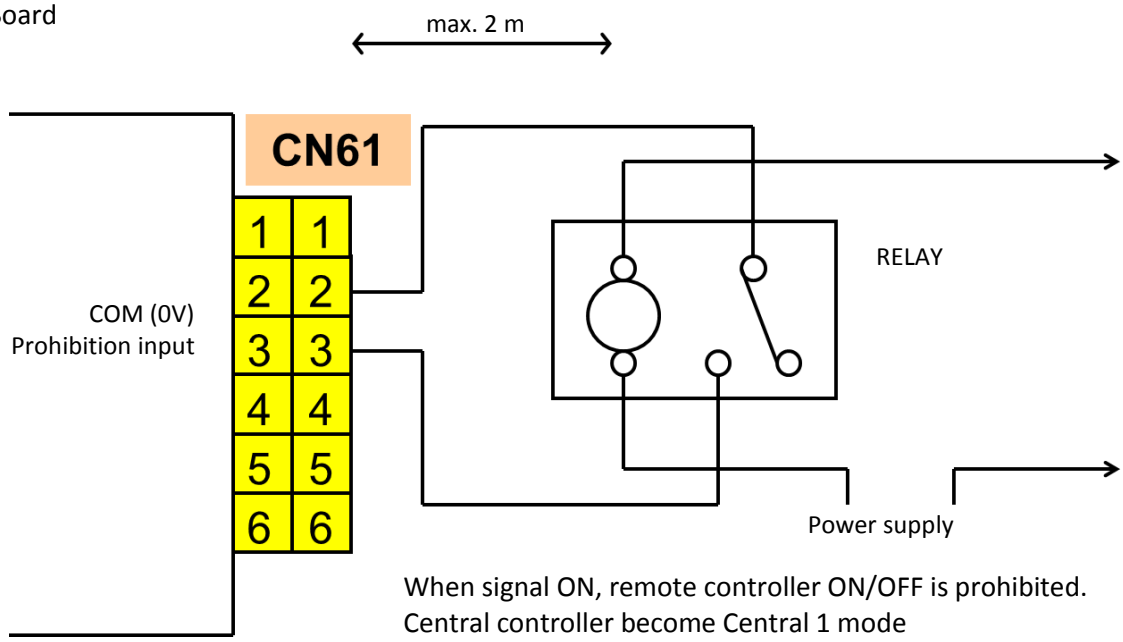


Logic

DN2E	J01	Action
0000 (At shipment)	○ Connect	PULSE-INPUT — Pulse width 200 to 300 mS, Pulse interval 200 mS or more
	✕ Cut	STATIC INPUT — ON / OFF
0001	○ Connect	LEAVING ON PREVENTION CONTROL — Prohibition reset / OFF & Prohibition
	✕ Cut	NO ACTION — No action; Heat = highest set point, COOL/DRY = Lowest set point, AUTO/FAN = Neglect

CN61 Prohibition input

Indoor P.C. Board



When signal ON, remote controller ON/OFF is prohibited.
Central controller become Central 1 mode

CN61 - Reference

Central controller prohibition mode

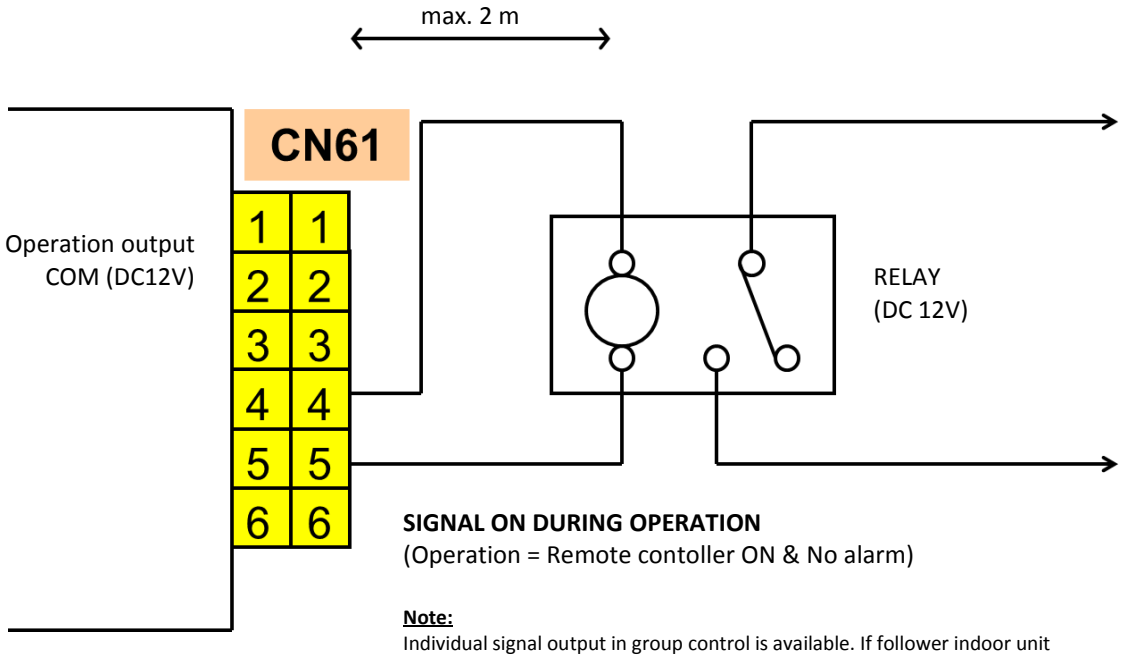
CN61
Prohibition

CENTRAL	ON/OFF	MODE	SET POINT
1	**X**		
2	X	X	X
3		X	X
4		X	

This prohibition can be released from central remote controller

CN61 (Operation output)

Indoor P.C. Board

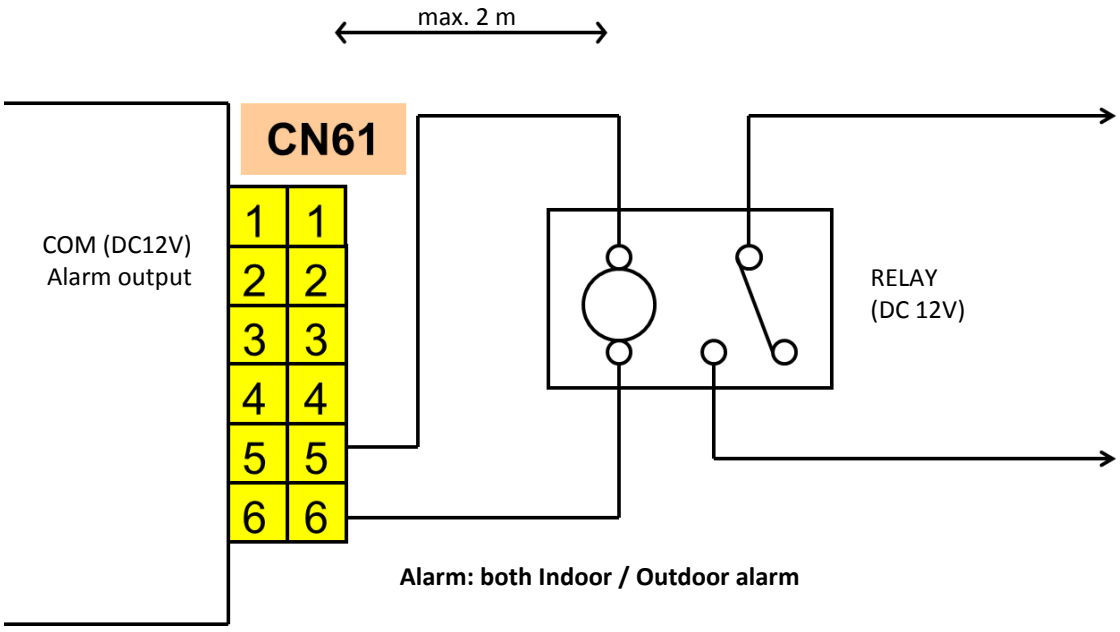


SIGNAL ON DURING OPERATION
(Operation = Remote contoller ON & No alarm)

Note:
Individual signal output in group control is available. If follower indoor unit generates alarm, signal become OFF in this indoor unit only

CN61 (Alarm output)

Indoor P.C. Board

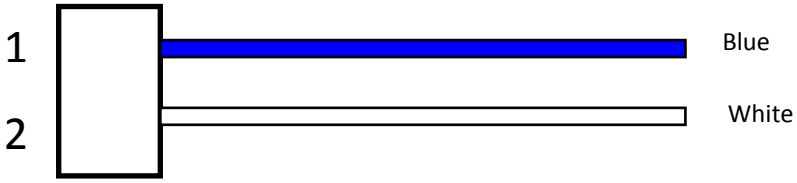


Alarm: both Indoor / Outdoor alarm

CN70 (TCB-KBCN70OAE)

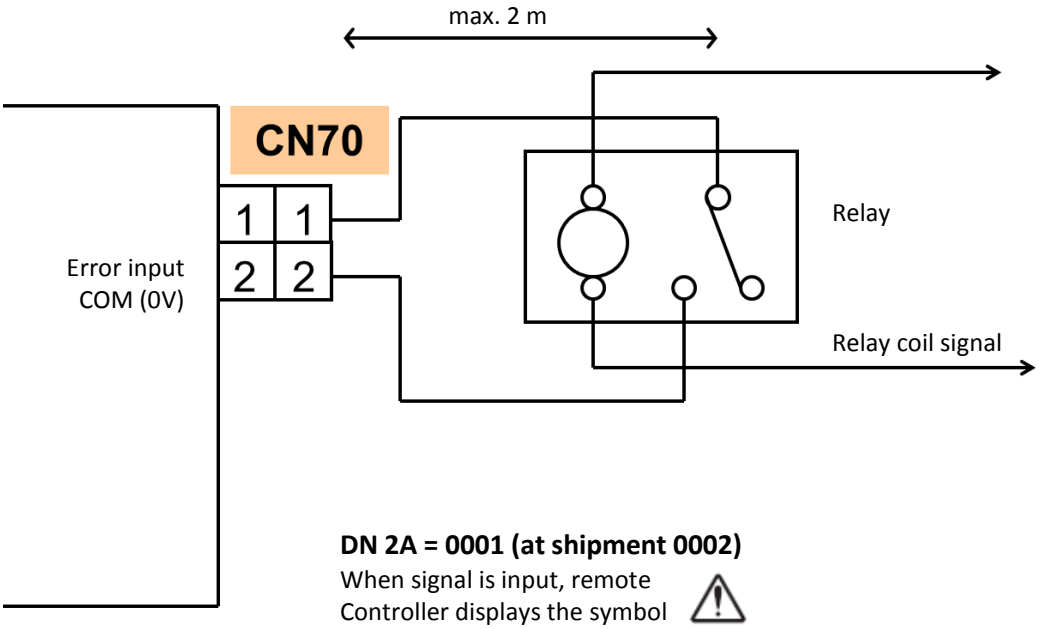
1	Error input	Default: DN2A =0002 (at shipment) DN2A=0001 (External error input) When signal is input, error symbol is displayed. (Indoor unit does not stop)
2	OV (Com)	

NOTE:
No CN70 connector in RAV-SM**KRT/ MMK-AP**2H



CN70 (Option error input)

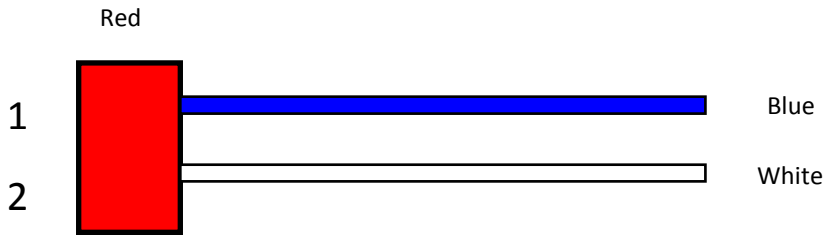
Indoor P.C. Board



DN 2A = 0001 (at shipment 0002)
When signal is input, remote
Controller displays the symbol ⚠
(This symbol is displayed even when RC is off)
Air conditioner does not stop

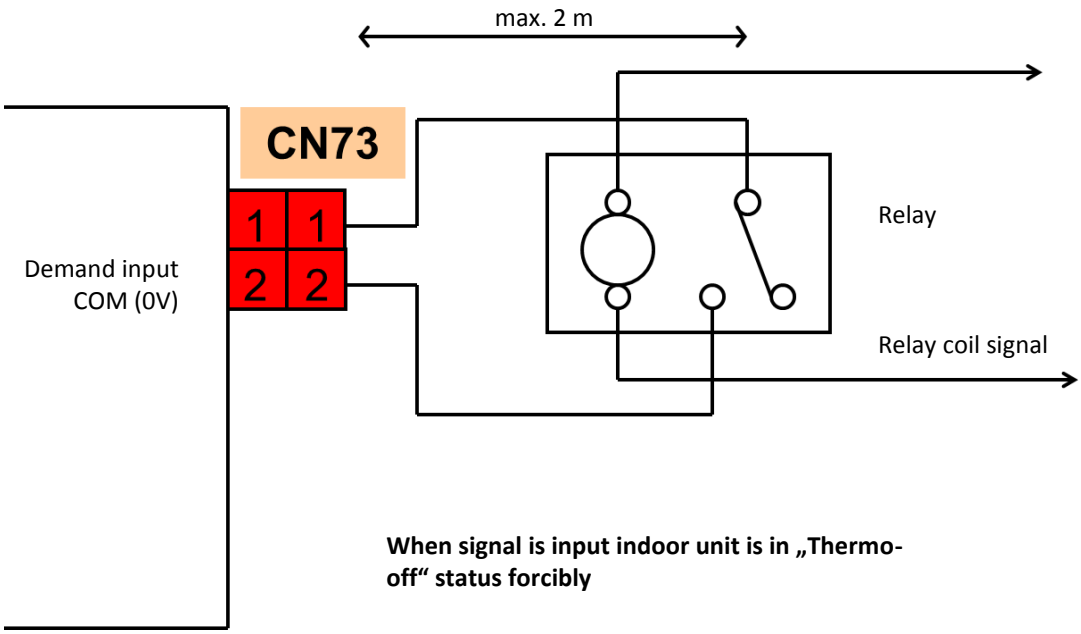
CN73 (TCB-KBCN73DEE)

1	Demand input	Indoor Unit forced thermo-OFF
2	OV (Com)	



CN73 (Demand input)

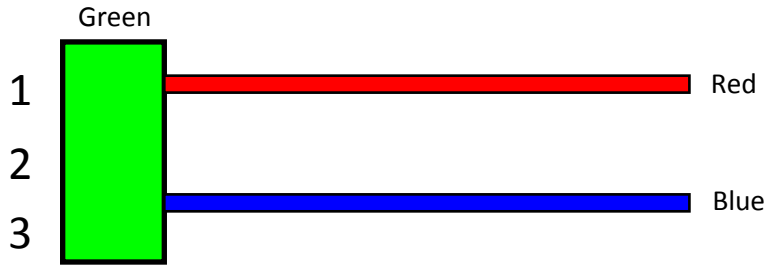
Indoor P.C. Board



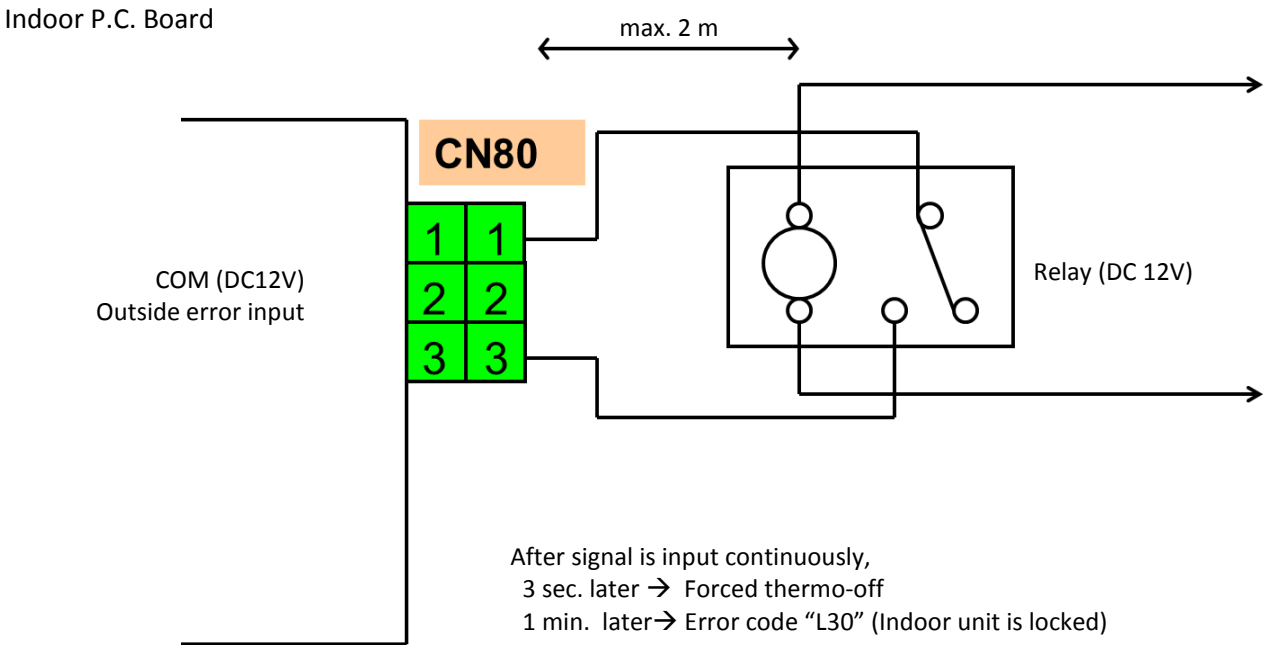
When signal is input indoor unit is in „Thermo-off“ status forcibly

CN80 (TCB-KBCN80EXE)

1	DC12V (COM)	Common for Pin.3
2	--	
3	Outside error input	After signal is input continuously, 3 sec. Forced thermo-off 1 min. Error code “L30” (Interlock form outside) and stop the operation (This unit only)



CN80 (Outside error input)



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AIR-COND Klimaanlagen Handelsgesellschaft m.b.H., Haushamer Straße 2, A-8054 Graz-Seiersberg, Austria, Tel.: +43 316 80 89, Fax: +43 316 82 63 71, E-mail: office@air-cond.com, www.air-cond.com

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